

REVISIONS
DATE: MAY 2, 1967
DATE: JUNE 2, 1967
DATE: JULY 21, 1967

# COLUMBIA

HOWARD COUNTY, MARYLAND

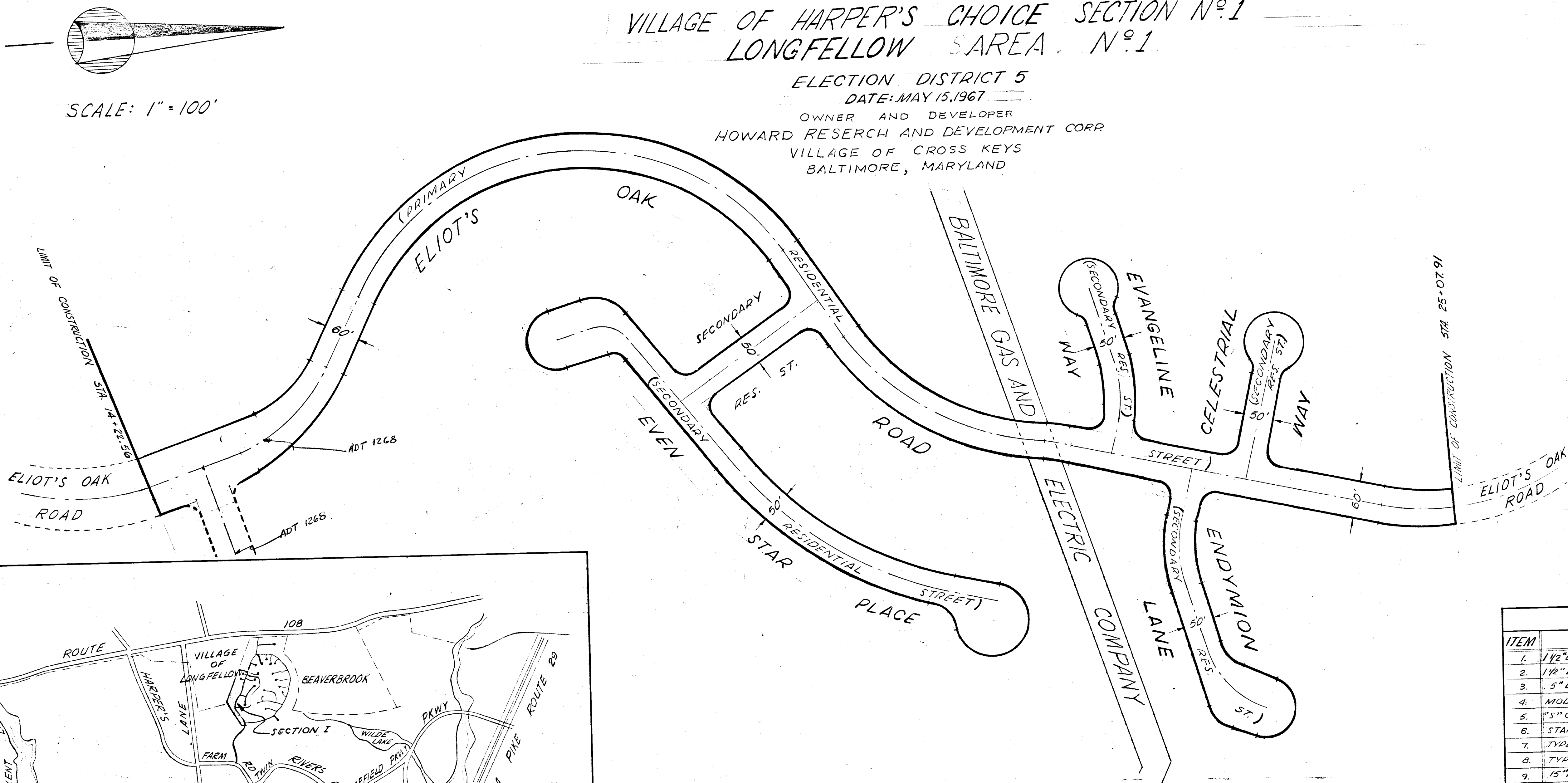
CONSTRUCTION PLANS

VILLAGE OF HARPER'S CHOICE SECTION N<sup>o</sup> 1  
LONGFELLOW AREA, N<sup>o</sup> 1

ELECTION DISTRICT 5  
DATE: MAY 15, 1967

OWNER AND DEVELOPER  
HOWARD RESEARCH AND DEVELOPMENT CORP.  
VILLAGE OF CROSS KEYS  
BALTIMORE, MARYLAND

SCALE: 1" = 100'



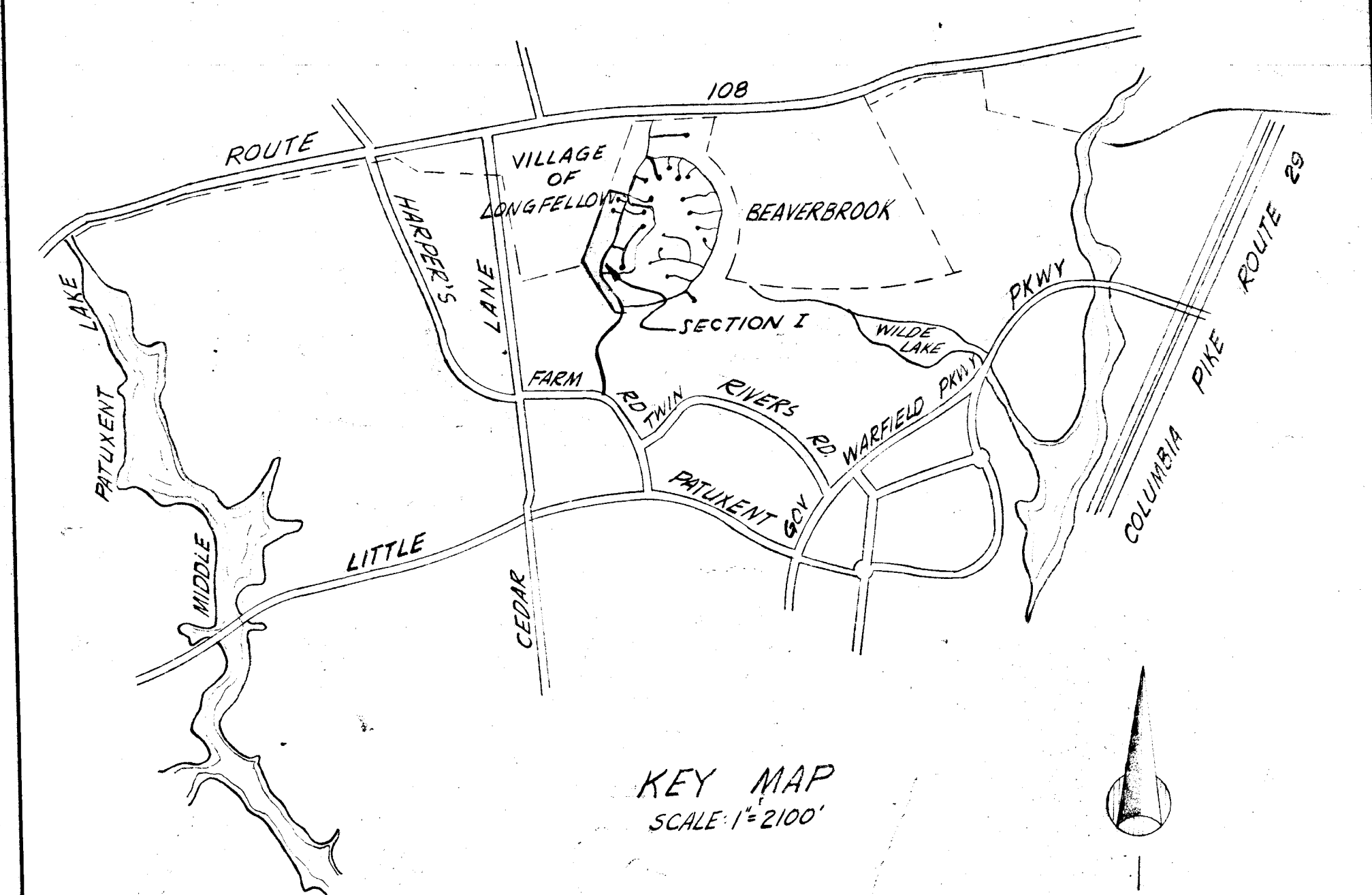
SHEET INDEX	
SHEET NO.	DESCRIPTION
1.	PLAN & PROFILE ELIOT'S OAK ROAD
2.	PLAN & PROFILE ELIOT'S OAK ROAD
3.	PLAN & PROFILE EVEN STAR PLACE
4.	PLAN & PROFILE EVANGELINE CELESTIAL & ENDYMION
5.	CURB PROFILES & CUL-DE-SAC
6-8.	CROSS SECTIONS ELIOT'S OAK RD. 0-05-1210
9.	CROSS SECTIONS ELIOT'S OAK RD. 3310-1210
10-11.	CROSS SECTIONS EVANGELINE MAY-0130-1210
12.	CROSS SECTIONS EVEN STAR PLACE
13-14.	CROSS SECTIONS ENDYMION OR CELESTIAL WAY
	CONSTRUCTION DETAILS

NOTES:

- ELIOT'S OAK ROAD IS DESIGNED FOR 25 MPH TRAFFIC SPEED. ALL OTHER ROADS WERE DESIGNED FOR 25 MPH TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS STANDARDS.
- ALL DETAILS ARE FROM ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS ISSUED OR ADOPTED BY COUNTY COMMISSIONERS OF HOWARD COUNTY ROAD DEPARTMENT.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE SPECIFICATION FOR STORM SEWERS REGARDING THE BACKFILLING OF TRENCHES BENEATH PAVEMENT CURB, SIDEWALK, OR OTHER UTILITY LINES.

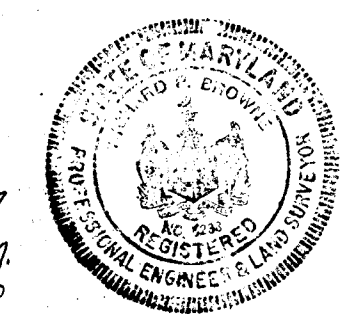
SUMMARY OF EARTHWORK	
STRIPPING OF TOPSOIL	9,050 C.Y.
EARTH EXCAVATION	26,162 C.Y.
EARTH FILL	29,897 C.Y.
PLACING OF TOPSOIL	2,320 C.Y.

ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	UNIT	QUANTITY
1.	1 1/2" BIT CONC. SURFACE COURSE	S.Y.	18,410
2.	1 1/2" BIT CONC. BINDER COURSE	S.Y.	18,410
3.	5" BIT CONC. BASE COURSE	S.Y.	18,410
4.	MOD. 1" COMB. SINGLE GRATE INLET	EA.	8
5.	1" COMB. DOUBLE GRATE INLET	EA.	10
6.	STANDARD MANHOLE	EA.	2
7.	TYPE "G" HEADWALL	EA.	5
8.	TYPE "F" HEADWALL	EA.	3
9.	15" RCCP ASTM C-76-64 CL III	L.F.	589
10.	18" RCCP ASTM C-76-64 CL III	L.F.	380
11.	24" RCCP ASTM C-76-64 CL III	L.F.	116
12.	27" RCCP ASTM C-76-64 CL III	L.F.	140
13.	30" RCCP ASTM C-76-64 CL III	L.F.	816
14.	36" RCCP ASTM C-76-64 CL III	L.F.	140
15.	42" RCCP ASTM C-76-64 CL III	L.F.	272
16.	48" RCCP ASTM C-76-64 CL III	L.F.	157
17.	CONCRETE MOUNTABLE CURB	L.F.	9,410
18.	CONCRETE VERTICAL CURB	L.F.	1,070
19.	EARTH EXCAVATION (ROADWAY)	C.Y.	35,212
20.	EARTH EXCAVATION (DRAIN DITCH)	L.F.	425
21.	PLACING OF TOPSOIL (DEPTH 4")	S.Y.	20,900
22.	CONCRETE SIDEWALK (4" THICK)	S.F.	34,200
23.	CONCRETE SIDEWALK (6" THICK)	S.F.	2,650
24.	SPECIAL MANHOLE 34" DIA.	EA.	1



Broune Pandullo & Associates  
ENGINEERS · PLANNERS · SURVEYORS  
COLUMBIA, MARYLAND

DATE: MAY 16, 1967  
DRAWN BY: J.V.M.  
CHECKED BY: W.R.

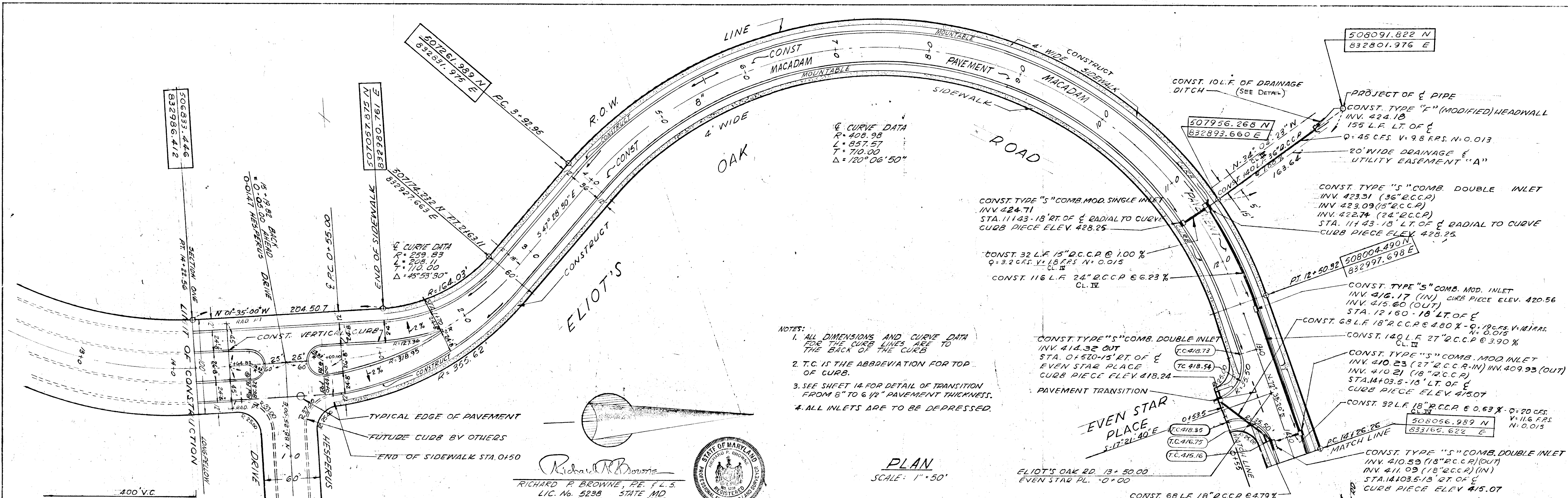


RICHARD P. BROWNE, PE & LS.  
LIC. NO. 5239 STATE MARYLAND

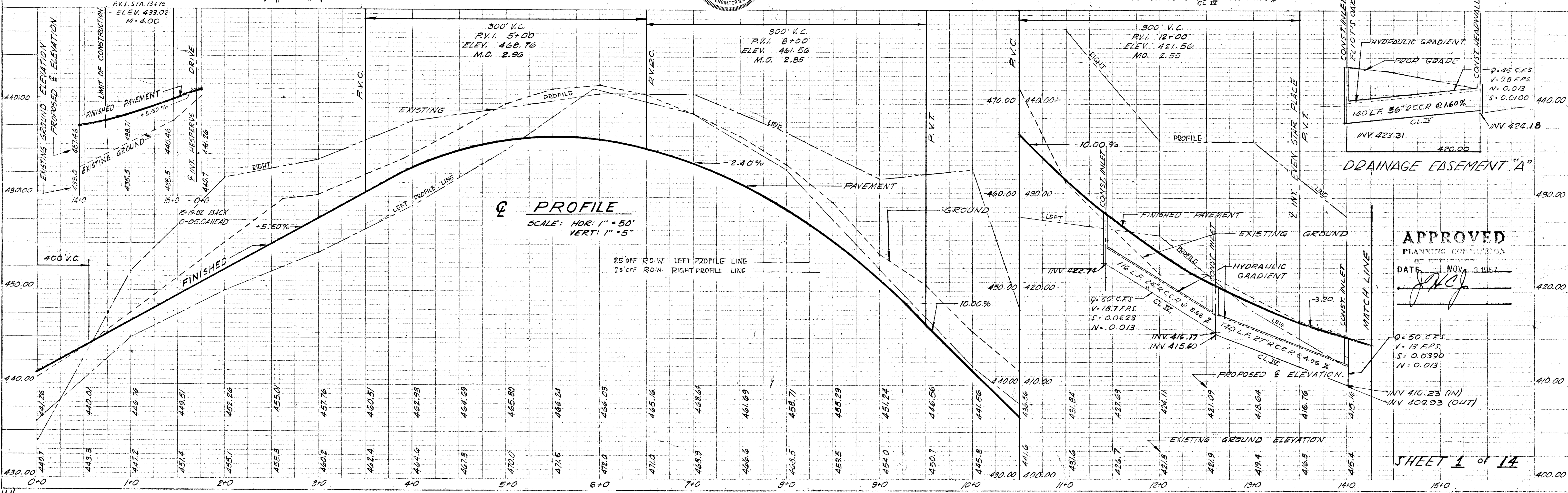
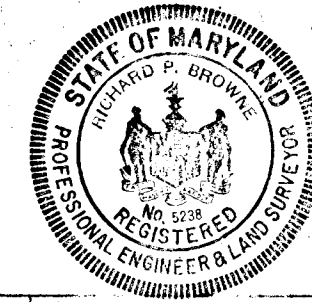
APPROVED BY: [Signature]  
HOWARD COUNTY PLANNING COMMISSION  
DATE: 11-3-67  
HOWARD COUNTY ROADS DEPARTMENT  
DATE: 11-6-67  
HOWARD COUNTY METROPOLITAN COMM.  
DATE: 11-9-67

FILE N<sup>o</sup> 1764  
F-27-30

PLAN  
 NOTE BOOK PLANNING CHECKED  
 NO. OF WAY CHECKED



Richard P. Browne  
 RICHARD P. BROWNE, P.E., F.L.S.  
 LIC. No. 5238 STATE MD.



**DRAINAGE EASEMENT "A"**

**APPROVED**  
 PLANNING COMMISSION  
 DATE: NOV 3 1967

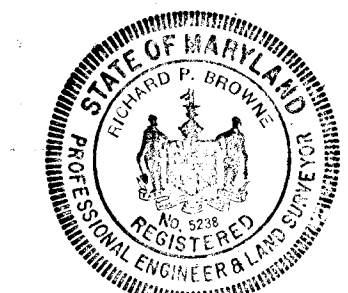
**SHEET 1 of 14**

DRAWN BY: J.V.M. FILE NO 17  
 CHECKED BY: W.R.

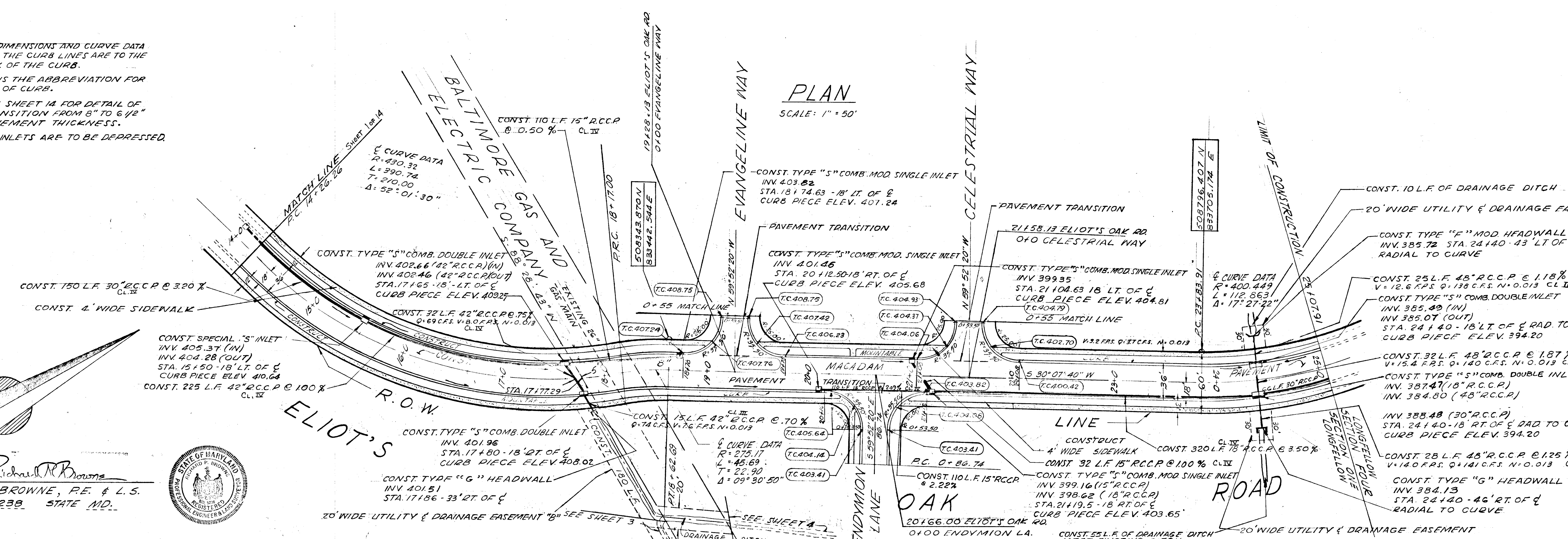
- NOTES:
1. ALL DIMENSIONS AND CURVE DATA FOR THE CURB LINES ARE TO THE BACK OF THE CURB.
  2. T.C. IS THE ABBREVIATION FOR TOP OF CURB.
  3. SEE SHEET 14 FOR DETAIL OF TRANSITION FROM 8" TO 6 1/2" PAVEMENT THICKNESS.
  4. ALL INLETS ARE TO BE DEPRESSED.

PLAN  
 CHECKED BY: [Signature]  
 DATE: [Date]  
 NO. [Number]

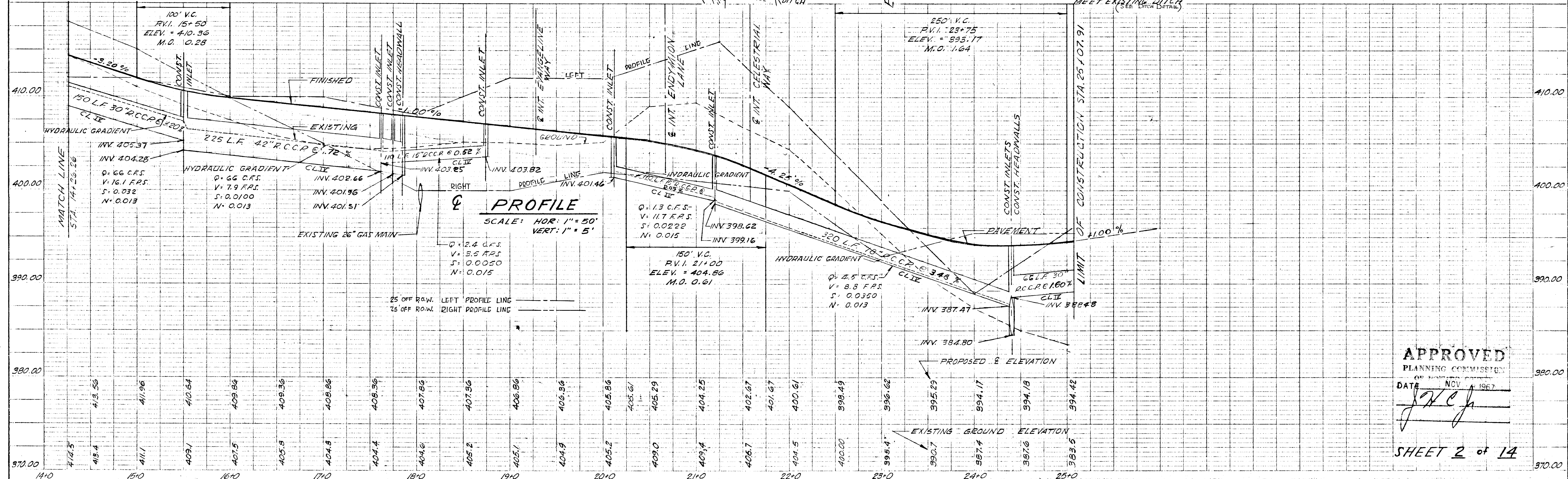
*Richard P. Browne*  
 RICHARD P. BROWNE, P.E. & L.S.  
 LIC. No. 5239, STATE MD.



**PLAN**  
 SCALE: 1" = 50'



**PROFILE**  
 SCALE: HOR: 1" = 50'  
 VERT: 1" = 5'



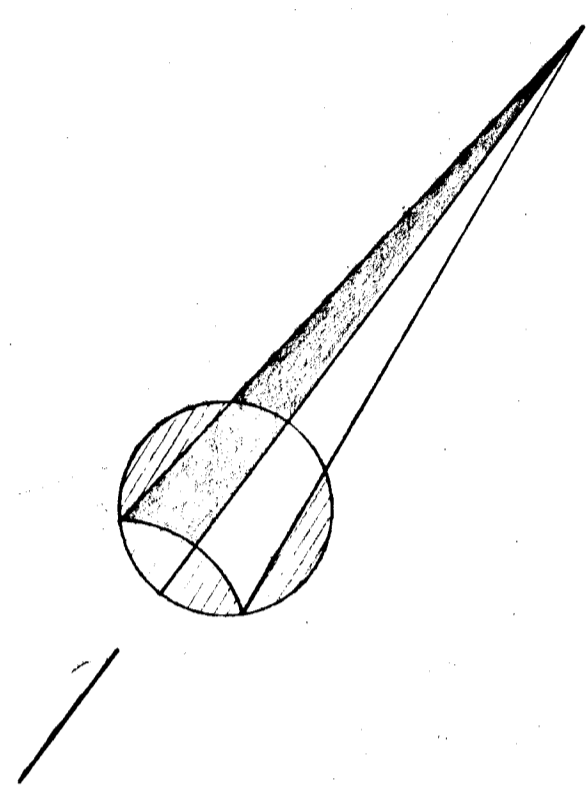
**APPROVED**  
 PLANNING COMMISSION  
 DATE: NOV 1967  
*J.P.C.*

SHEET 2 of 14

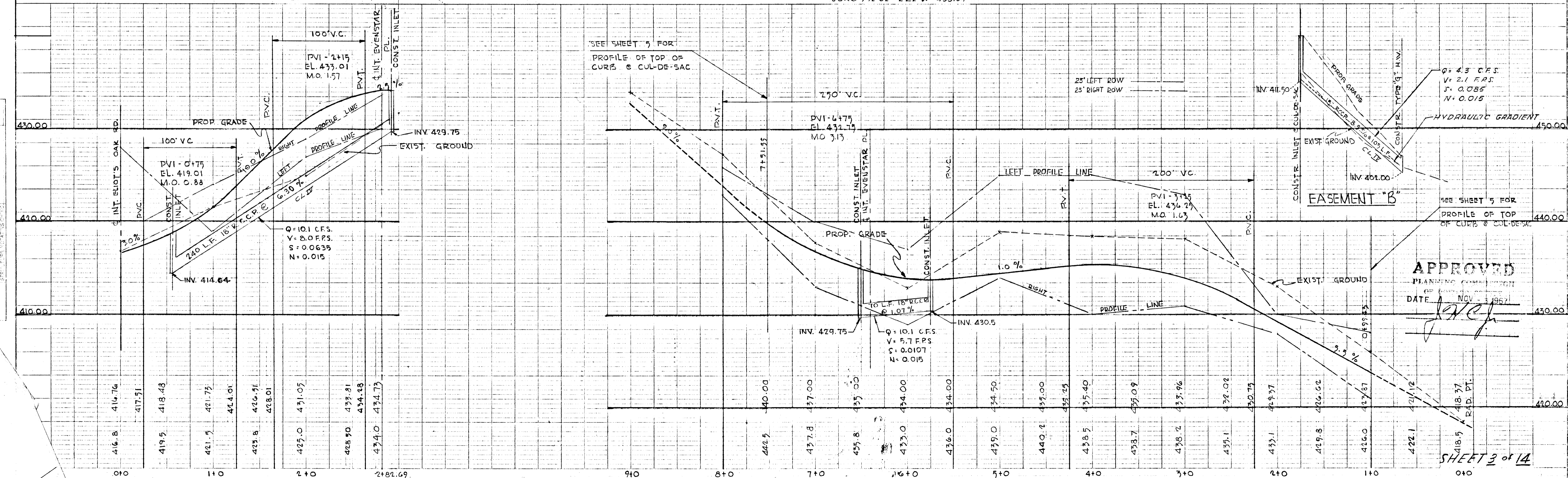
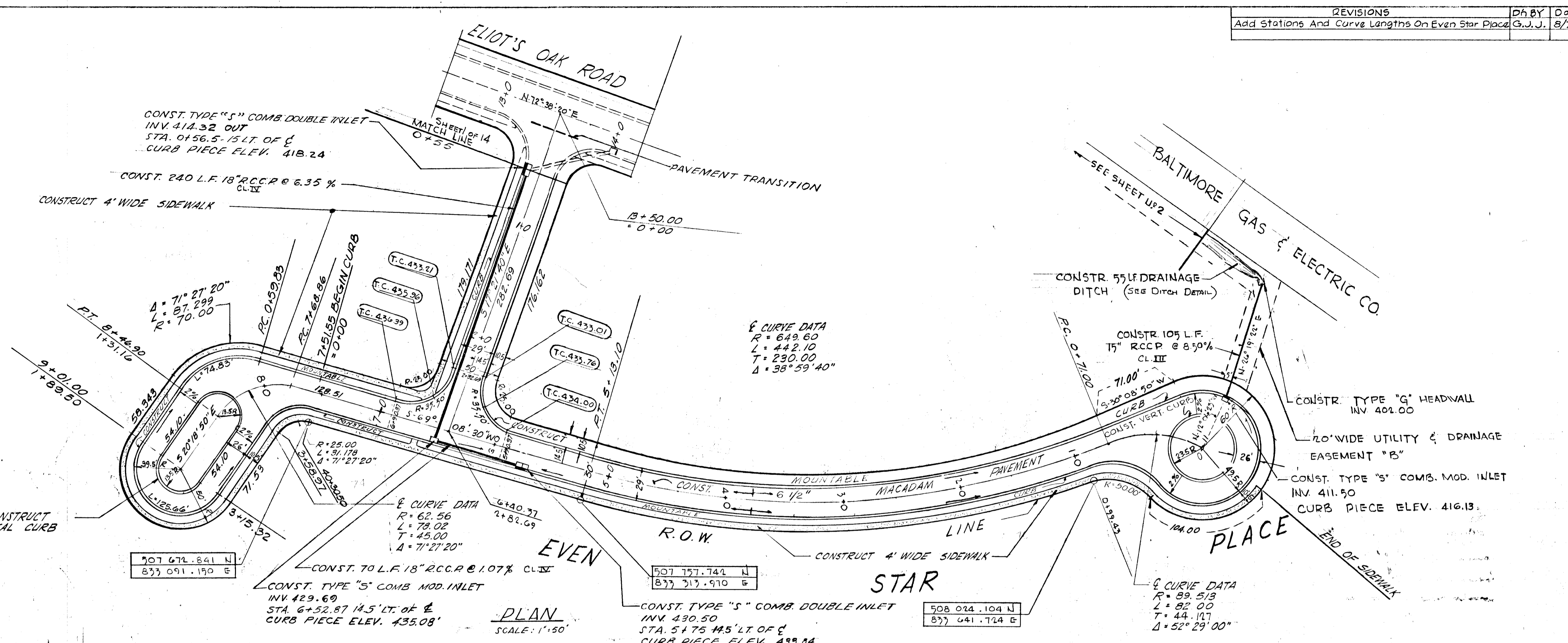
DRAWN BY: J.V.M.  
 CHECKED BY: W.R. FILE NO 1764  
 F-17-30

- NOTES:
1. ALL DIMENSIONS AND CURVE DATA FOR THE CURB LINES ARE TO THE BACK OF THE CURB.
  2. T.C. IS THE ABBREVIATION FOR TOP OF CURB.
  3. SEE SHEET 14 FOR DETAIL OF TRANSITION FROM 8" TO 6 1/2" PAVEMENT THICKNESS.
  4. ALL INLETS ARE TO BE DEPRESSED.

PLAN  
 SHEET 14  
 DATE: 8/7/67  
 BY: G.J.J.



Richard P. Browne  
 RICHARD P. BROWNE, P.E. & L.S.  
 LIC. No. 5238 STATE MD.



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 PLANNING COMMISSION  
 DATE: NOV - 1967  
 [Signature]

SHEET 3 of 14

DRAWN BY: J.V.M.  
 CHECKED BY: W.P. FILE NO. 1764  
 F-67-30

NOTE:  
1. ALL DIMENSIONS AND CURVE DATA FOR THE CURVE LINES ARE TO BE TO THE BACK OF THE CURB.  
2. ALL INLETS ARE TO BE DEPRESSED.

Q CURVE DATA  
R = 135.77  
L = 97.68  
T = 50.00  
Δ = 30° 07' 40"

EVANGELINE WAY

CELESTRIAL WAY

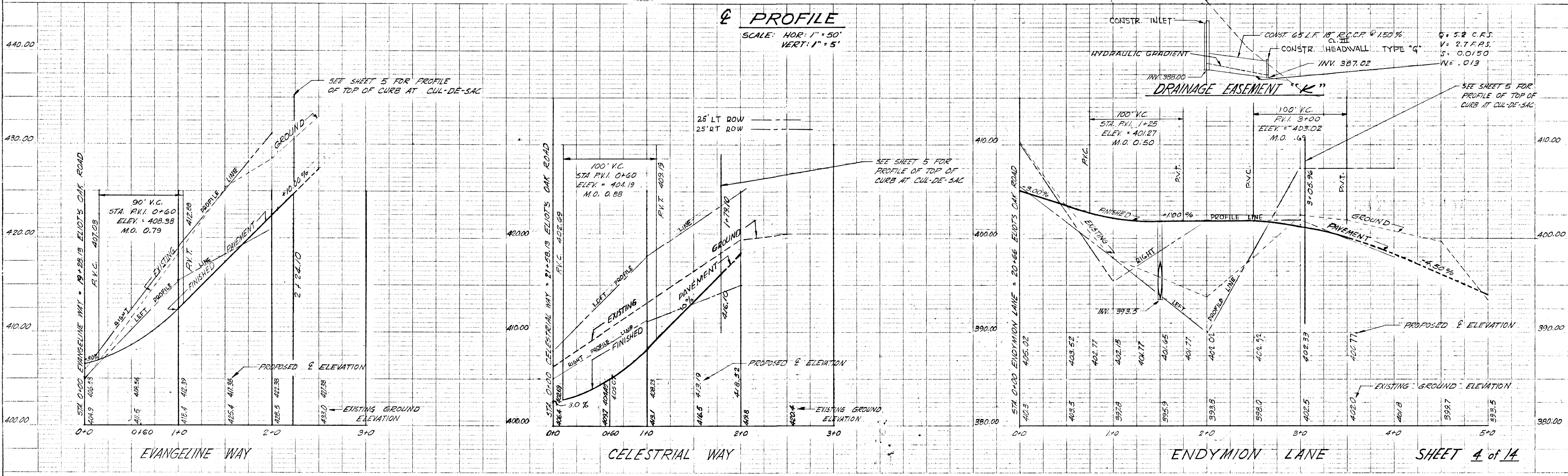
ENDYMION LANE

PLAN  
SCALE: 1" = 50'

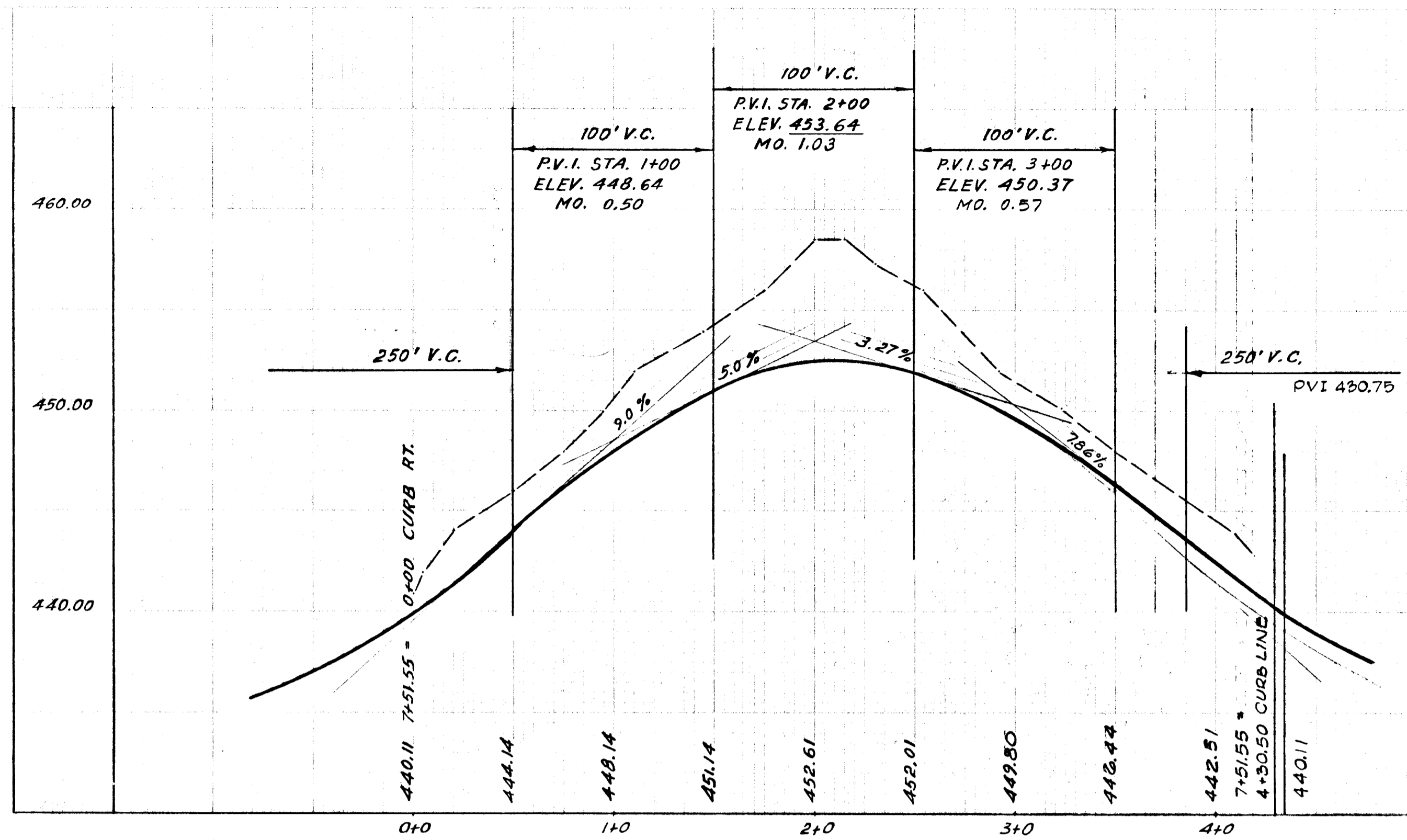
Richard P. Browne  
RICHARD P. BROWNE, P.E. & L.S.  
LIC. NO. 5238 STATE MARYLAND



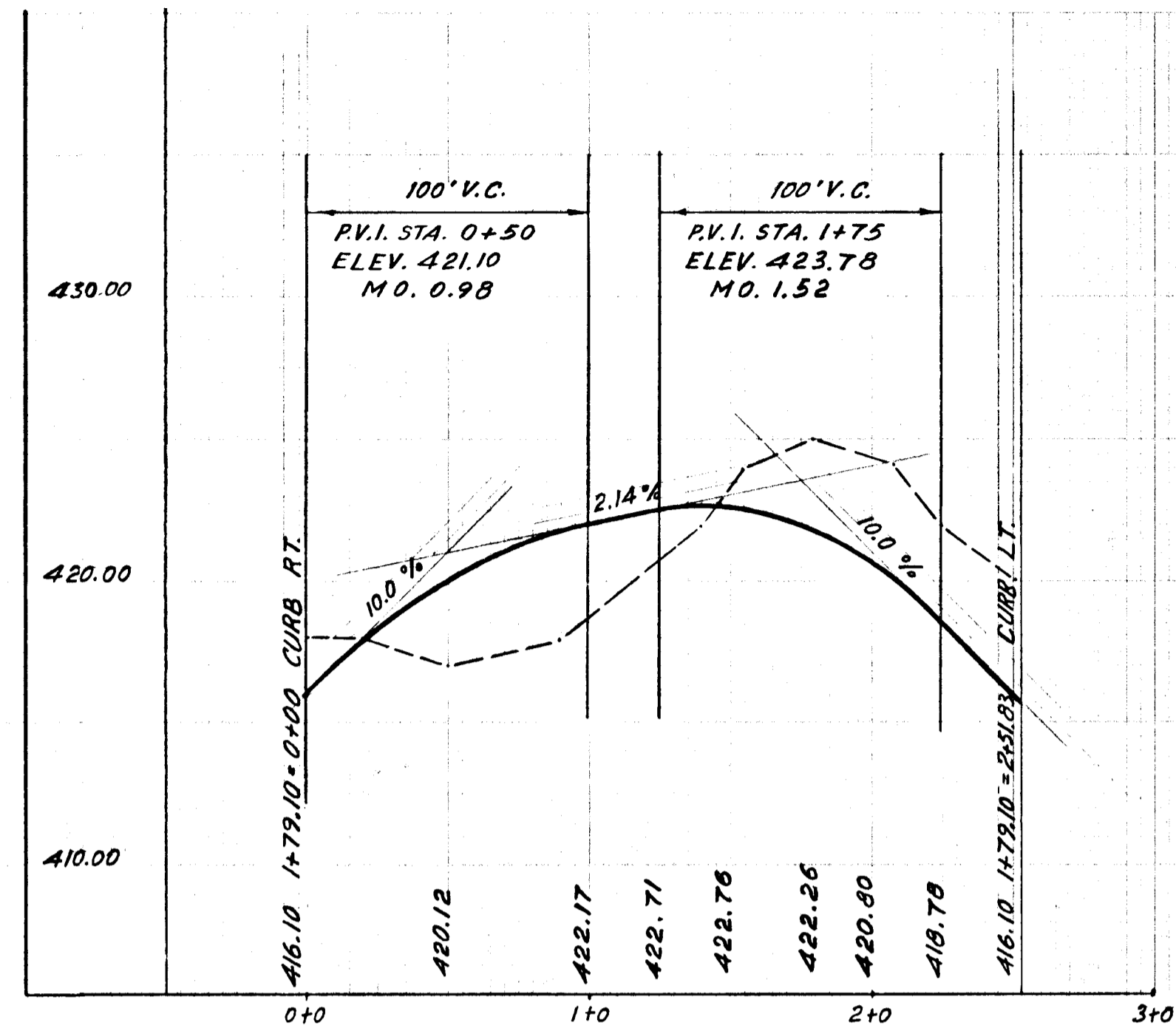
APPROVED  
PLANNING COMMISSION  
OF  
STATE OF MARYLAND  
DATE NOV 1 1967  
J. H. C.



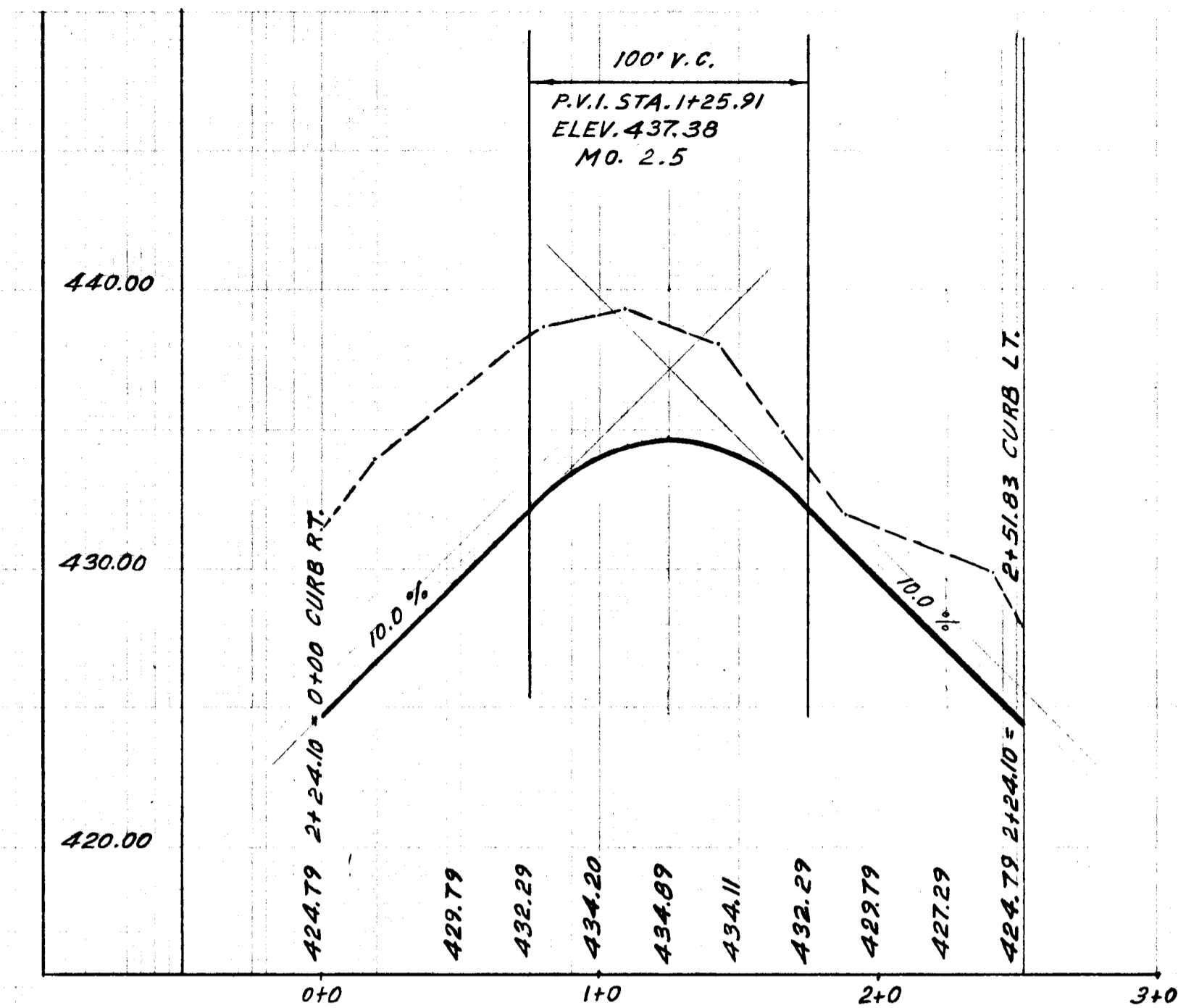
SHEET 4 of 14



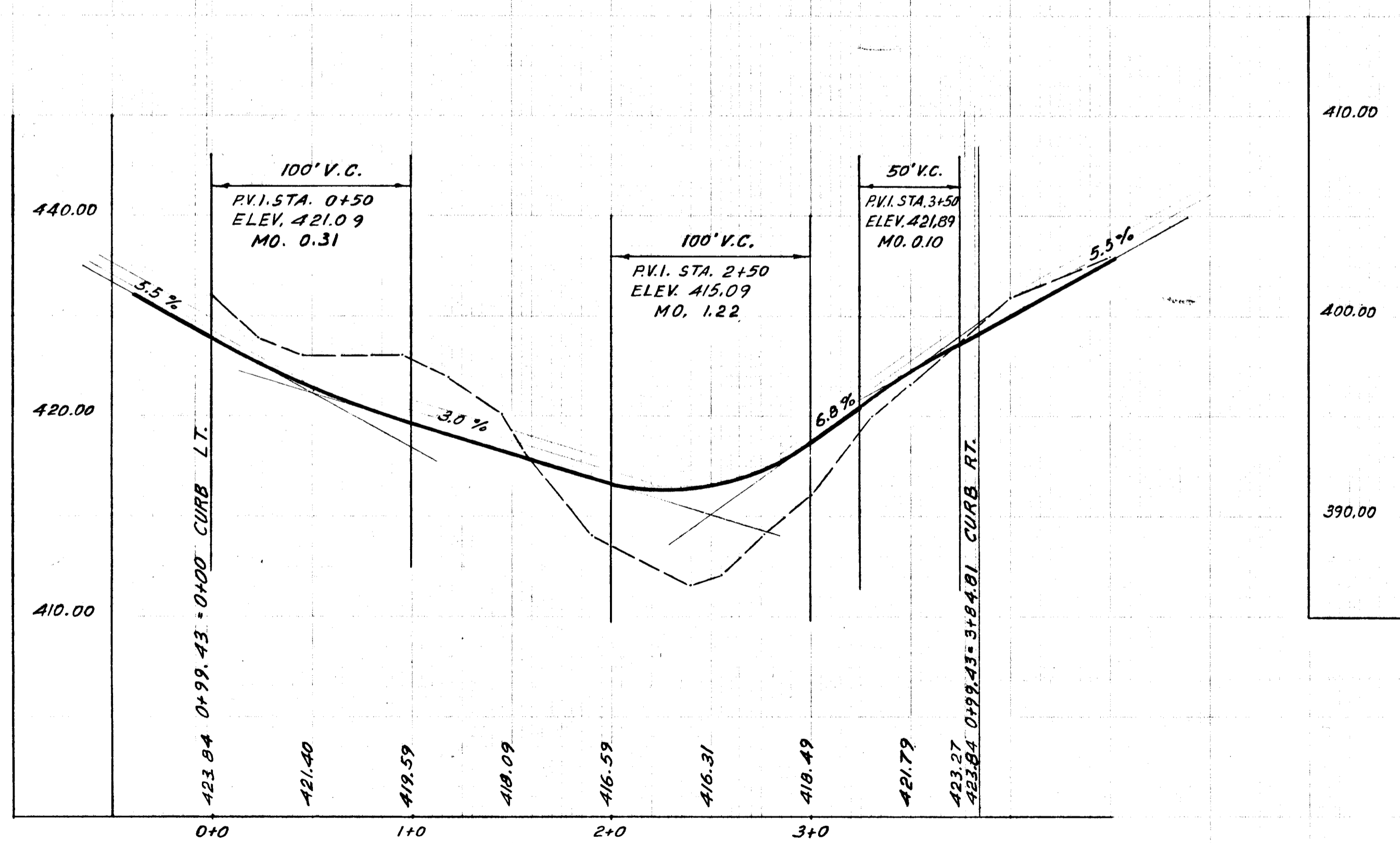
EVEN STAR PLACE



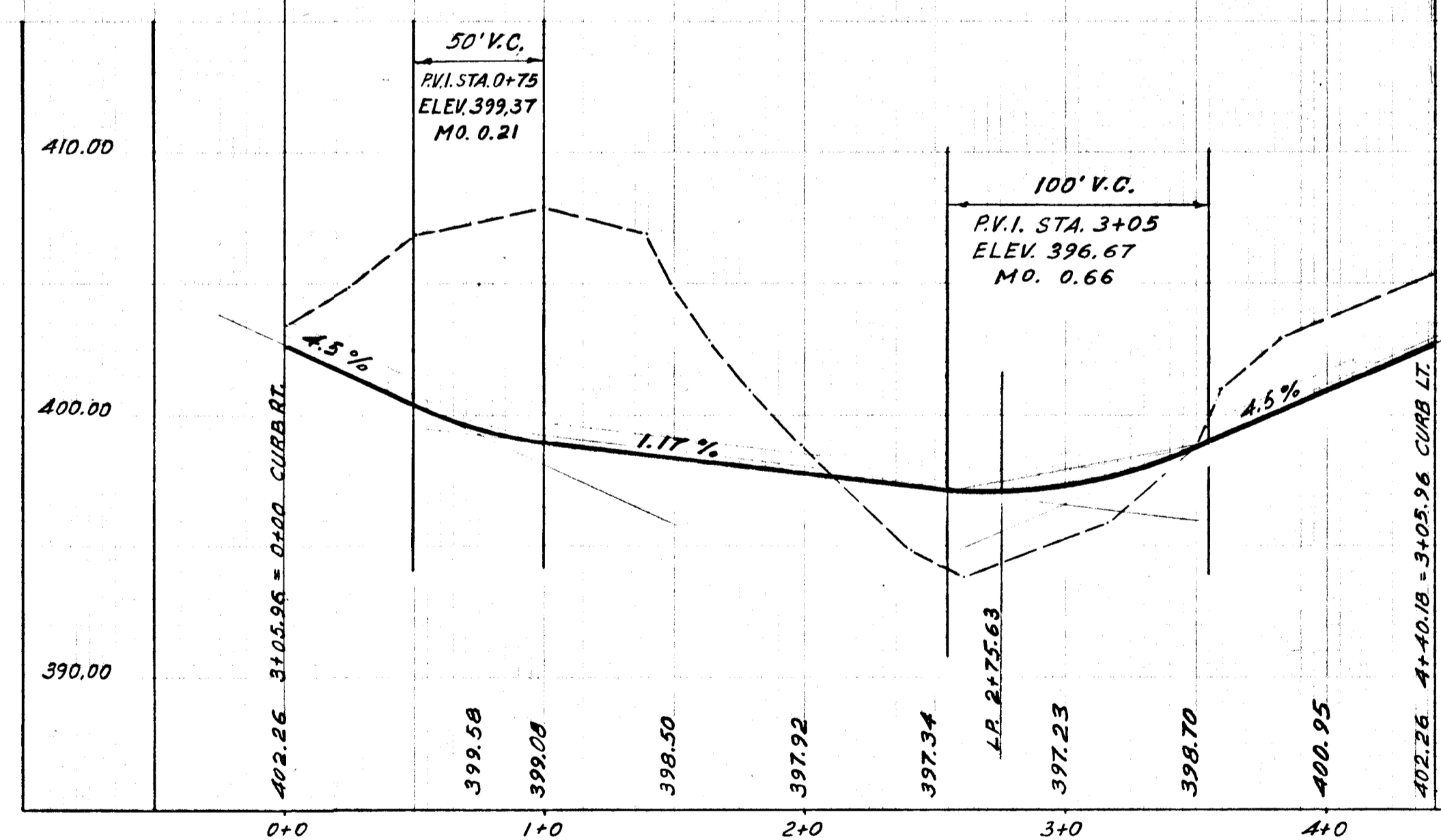
CELESTRIAL WAY



EVANGELINE WAY



EVEN STAR PLACE



ENDYMION LANE

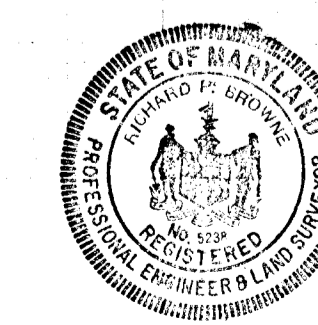
APPROVED  
 PLANNING COMMISSION  
 OF BENTLEY COUNTY  
 DATE NOV - 3, 1967  
*J. K. [Signature]*

TOP OF CURB PROFILES

AT  
 CUL-DE-SAC

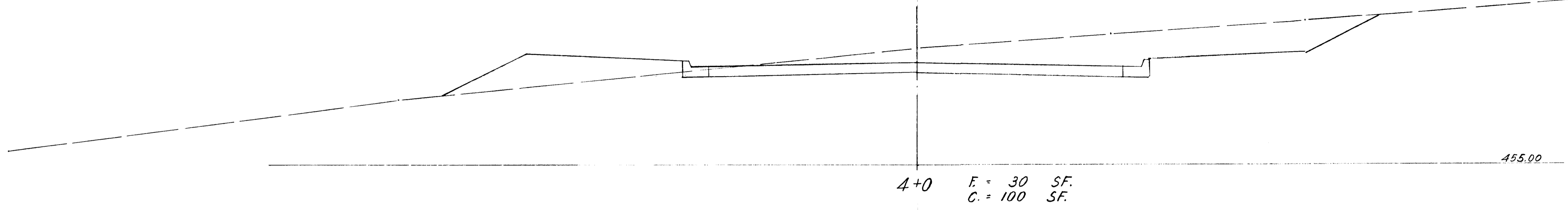
SCALE: HORIZ. 1"=50', VERT. 1"=5'

*Richard P. Browne*  
 Richard P. Browne, P. E. & I. S.  
 Maryland license No. 5239

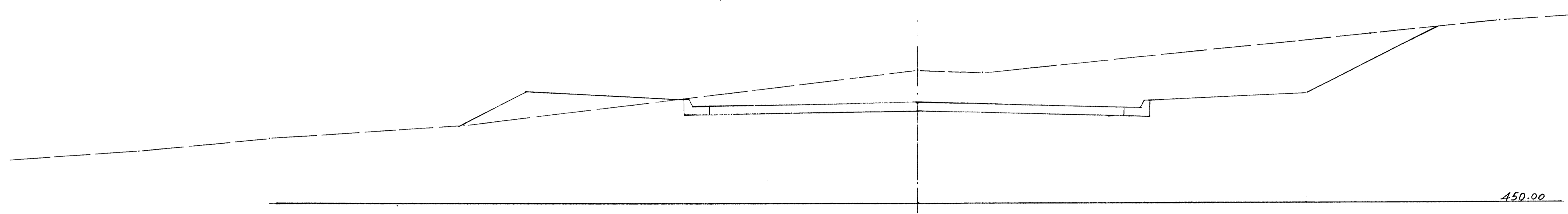


Changed Grade & Stations On Even Star Place	Dr. BY	Date
REVISIONS		8/8/67

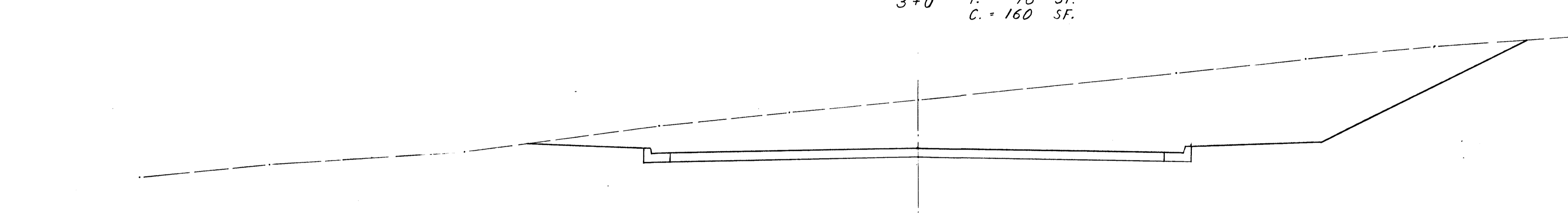
REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION



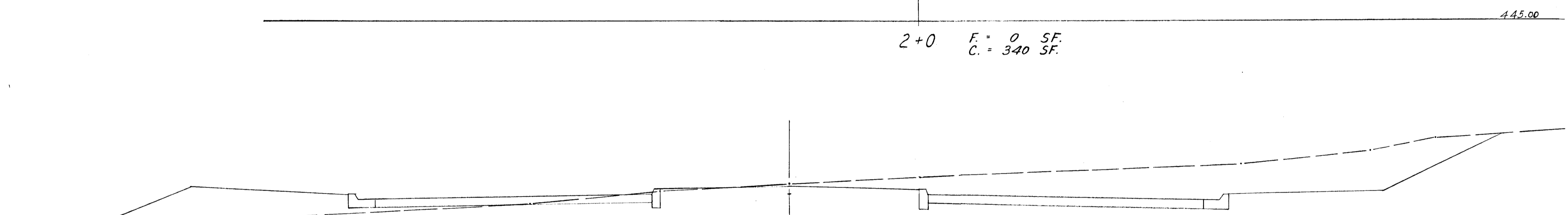
4+0 F = 30 SF.  
C = 100 SF.



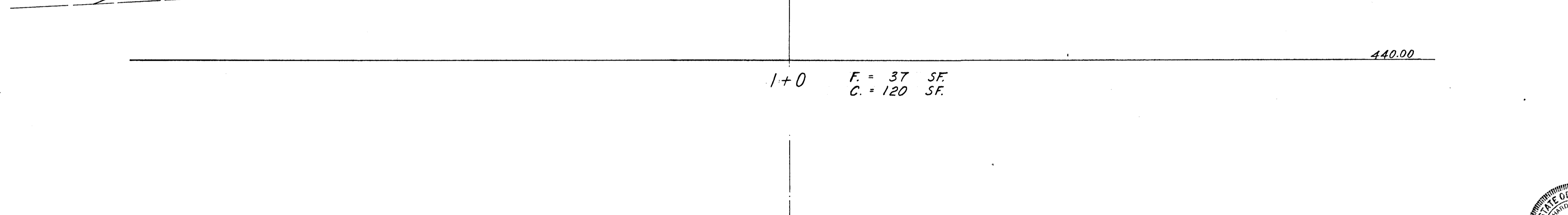
3+0 F = 18 SF.  
C = 160 SF.



2+0 F = 0 SF.  
C = 340 SF.



1+0 F = 37 SF.  
C = 120 SF.



0-05 F = 135 SF.  
C = 0 SF.

APPROVED  
PLANNING COMMISSION  
OF HORTON COUNTY  
DATE NOV 3 1967  
*[Signature]*



*Richard P. Browne*  
Richard P. Browne, P. E. & L. S.  
Maryland license No. 5238  
LIC. NO. \_\_\_\_\_ STATE \_\_\_\_\_

<b>CROSS SECTIONS</b>	
<b>ELIOT'S OAK ROAD</b>	
0-05 TO 4+0	
SCALE HOR. 1"=5' VERT. 1"=5' DATE MAY 1967	
<b>BROWNE - PANDULLO &amp; ASSOCIATES</b>	
ENGINEERS • PLANNERS • SURVEYORS	
DRWN. M.G.S. CHK'D. _____	SHEET 6 OF 14

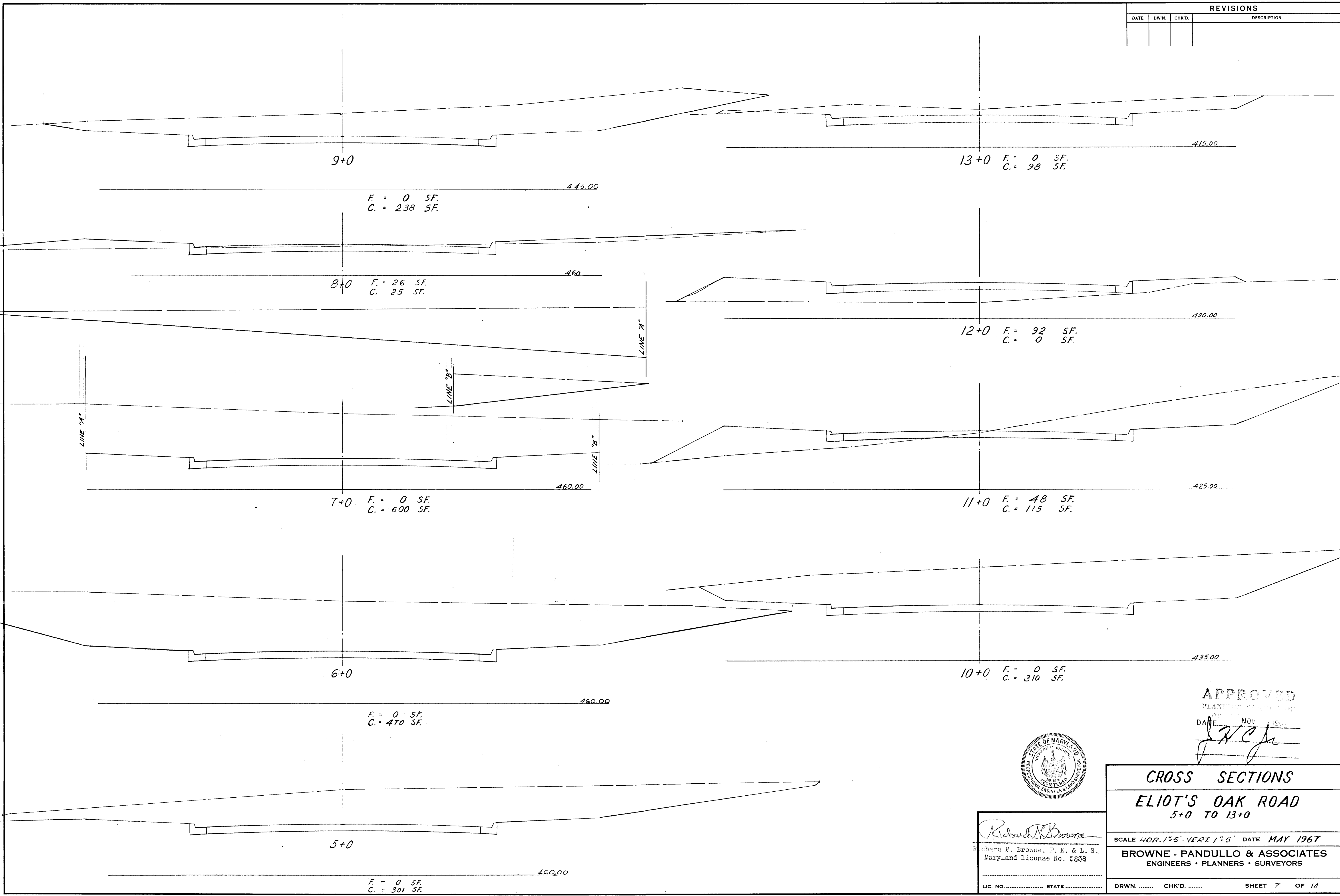
ELIOT'S OAK ROAD (SHEET 4 OF 5) STA. 14+22.56. FILL = 441 SF., CUT = 0 SF.

#11

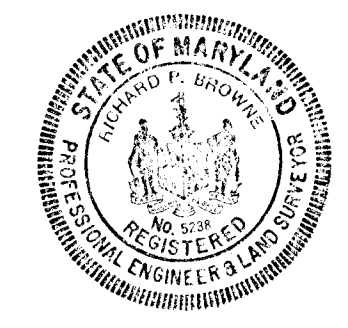
FILE NO. 1764

F-67-30

REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION



APPROVED  
 PLANNING OF ROADWORK  
 DATE NOV 1967  
*JHC*



*Richard P. Browne*  
 Richard P. Browne, P. E. & L. S.  
 Maryland license No. 5239  
 LIC. NO. \_\_\_\_\_ STATE \_\_\_\_\_

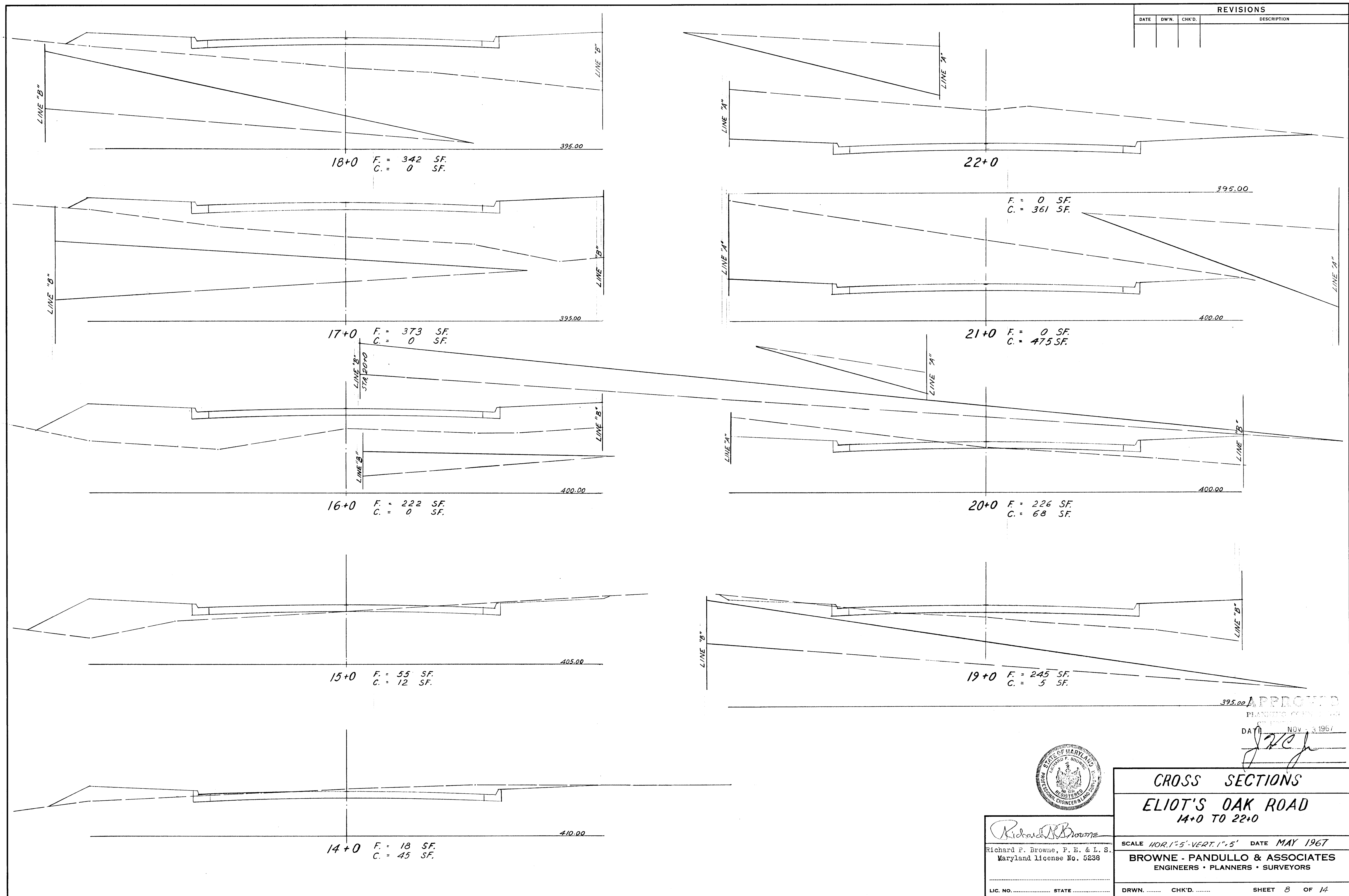
**CROSS SECTIONS**  
**ELIOT'S OAK ROAD**  
 5+0 TO 13+0  
 SCALE HOR. 1"=5' - VERT. 1"=5' DATE MAY 1967  
**BROWNE - PANDULLO & ASSOCIATES**  
 ENGINEERS • PLANNERS • SURVEYORS  
 DRWN. \_\_\_\_\_ CHK'D. \_\_\_\_\_ SHEET 7 OF 14

#11

FILE NO. 1764



REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION



APPROVED  
 PLANNING ENGINEER  
 DATE NOV 3 1967  
*J. P. [Signature]*



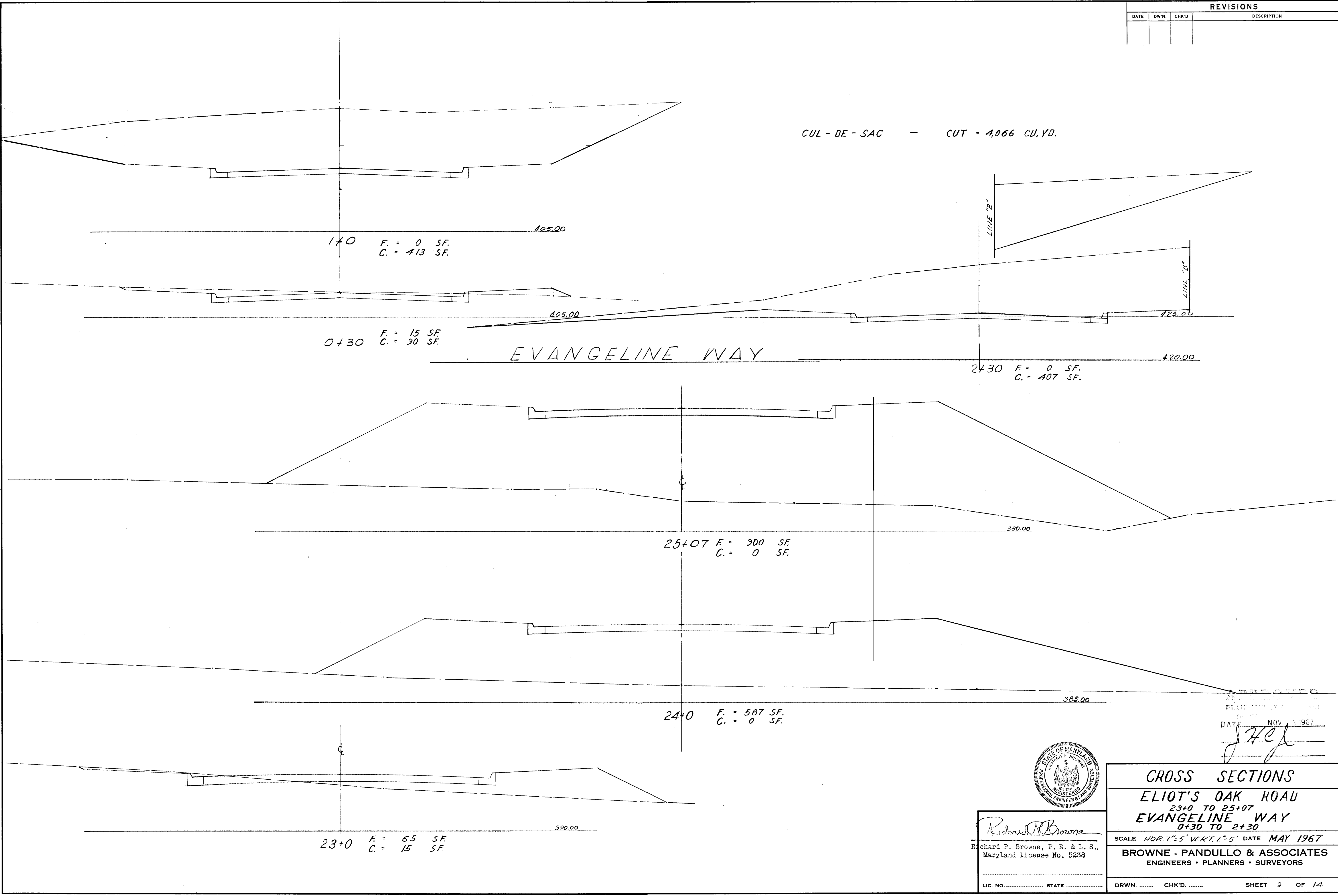
Richard P. Browne  
 Richard P. Browne, P. E. & L. S.  
 Maryland License No. 5238  
 LIC. NO. \_\_\_\_\_ STATE \_\_\_\_\_

**CROSS SECTIONS**  
**ELIOT'S OAK ROAD**  
**14+0 TO 22+0**  
 SCALE HOR. 1"=5' VERT. 1"=5' DATE MAY 1967  
**BROWNE - PANDULLO & ASSOCIATES**  
 ENGINEERS • PLANNERS • SURVEYORS  
 DRWN. \_\_\_\_\_ CHK'D. \_\_\_\_\_ SHEET 8 OF 14

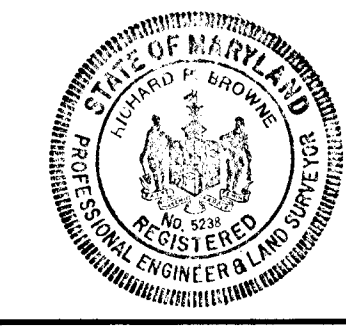
FILE NO. 1764

REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION

CUL - DE - SAC - CUT = 4,066 CU. YD.



APPROVED  
 PLANNED BY  
 DATE NOV 3 1967  
*J. H. E.*



*Richard P. Browne*  
 Richard P. Browne, P. E. & L. S.,  
 Maryland license No. 5223

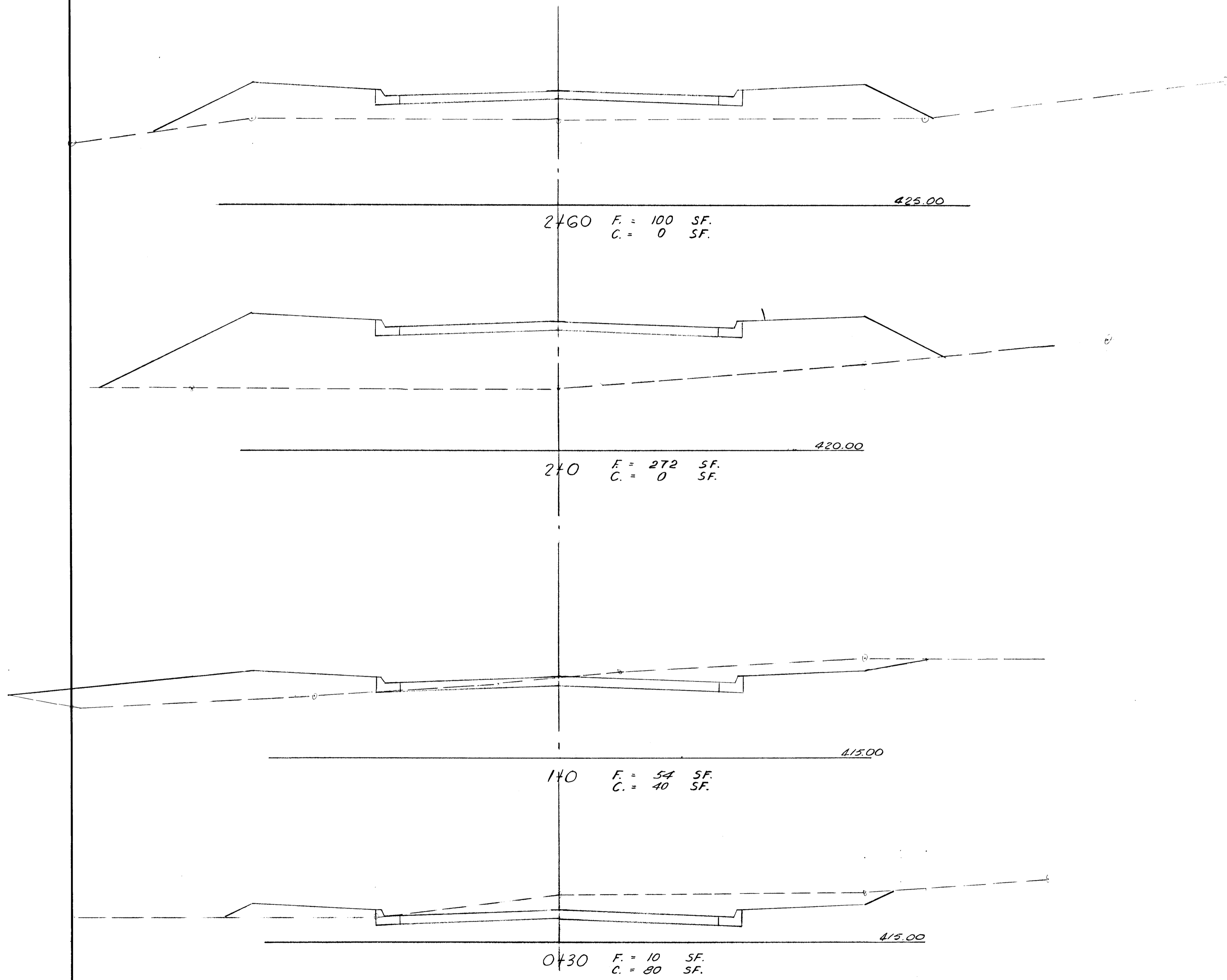
**CROSS SECTIONS**  
 ELIOT'S OAK ROAD  
 23+0 TO 25+07  
 EVANGELINE WAY  
 0+30 TO 2+30

SCALE HOR. 1"=5' VERT. 1"=5' DATE MAY 1967

**BROWNE - PANDULLO & ASSOCIATES**  
 ENGINEERS • PLANNERS • SURVEYORS

DRWN. .... CHK'D. .... SHEET 9 OF 14

REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION



APPROVED  
PLANNING COMMISSION  
OF MARYLAND  
DATE NOV 1967  
*[Signature]*



*Richard P. Browns*  
Richard P. Browns, P. E. & L. S.  
Maryland license No. 5238

**CROSS SECTIONS**  
**EVEN STAR PLACE**  
0+30 TO 2+60

SCALE HOR. 1"=5' VERT. 1"=5' DATE MAY 1967

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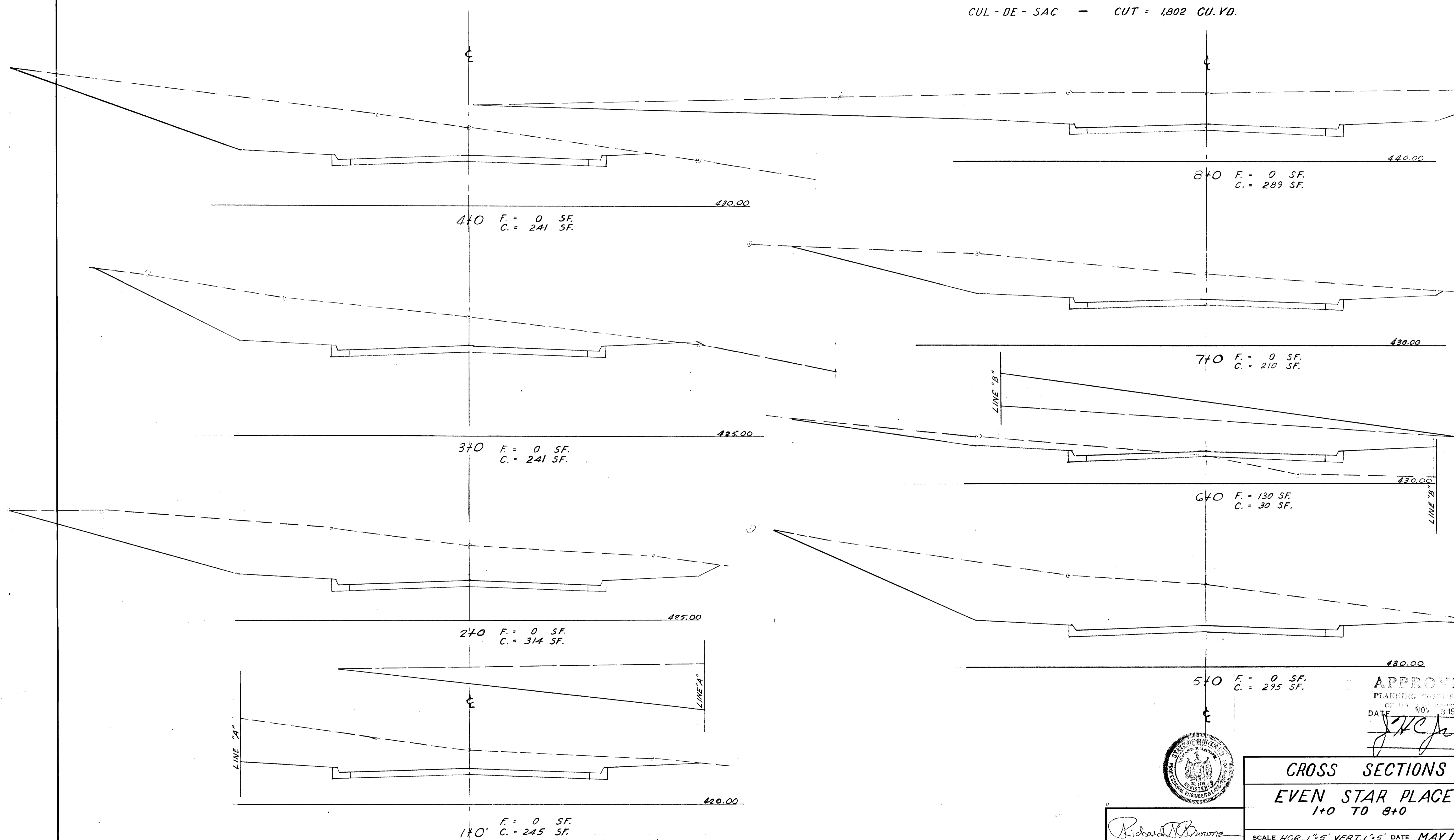
DRWN. .... CHK'D. .... SHEET 10 OF 14

#11

FILE NO. 1764

REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION

CUL - DE - SAC - CUT = 1,802 CU. YD.



CUL - DE - SAC - CUT = 550 CU. YD.

APPROVED  
 PLANNING COMMISSION  
 OF HAYT, GEORGETOWN  
 DATE NOV 13 1967  
*JTC Jr*



*Richard P. Browne*  
 Richard P. Browne, P. E. & L. S.  
 Maryland license No. 5238

**CROSS SECTIONS**  
**EVEN STAR PLACE**  
 1+0 TO 8+0

SCALE HOR. 1"=5' VERT. 1"=5' DATE MAY 1967

**BROWNE - PANDULLO & ASSOCIATES**  
 ENGINEERS • PLANNERS • SURVEYORS

DRWN. .... CHK'D. .... SHEET 11 OF 14

FILE NO. 1764

REVISIONS			
DATE	DWN.	CHK'D.	DESCRIPTION

CUL - DE - SAC - CUT = 3,200 CU. YD.

CUL - DE - SAC - CUT = 694 CU. YD.

3+0 F. = 22 SF.  
C. = 97 SF.

2+0 F. = 0 SF.  
C. = 172 SF.

2+0 F. = 611 SF.  
C. = 0 SF.

1+0 F. = 0 SF.  
C. = 396 SF.

1+0 F. = 446 SF.  
C. = 0 SF.

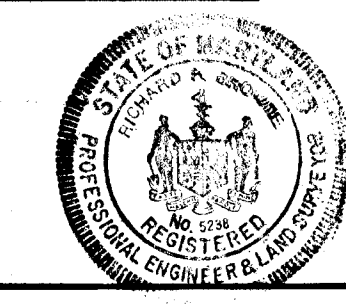
0+30 F. = 0 SF.  
C. = 403 SF.

0+30 F. = 10 SF.  
C. = 76 SF.

ENDYMION LANE

CELESTRIAL WAY

APPROVED  
PLANNING COMMISSION  
OF HENRIER COUNTY  
DATE NOV - 3 1967



Richard P. Browne  
Richard P. Browne, P. E. & L. S.  
Maryland license No. 5238

CROSS SECTIONS

ENDYMION LANE  
0+30 TO 3+0  
CELESTRIAL WAY  
0+30 TO 2+0

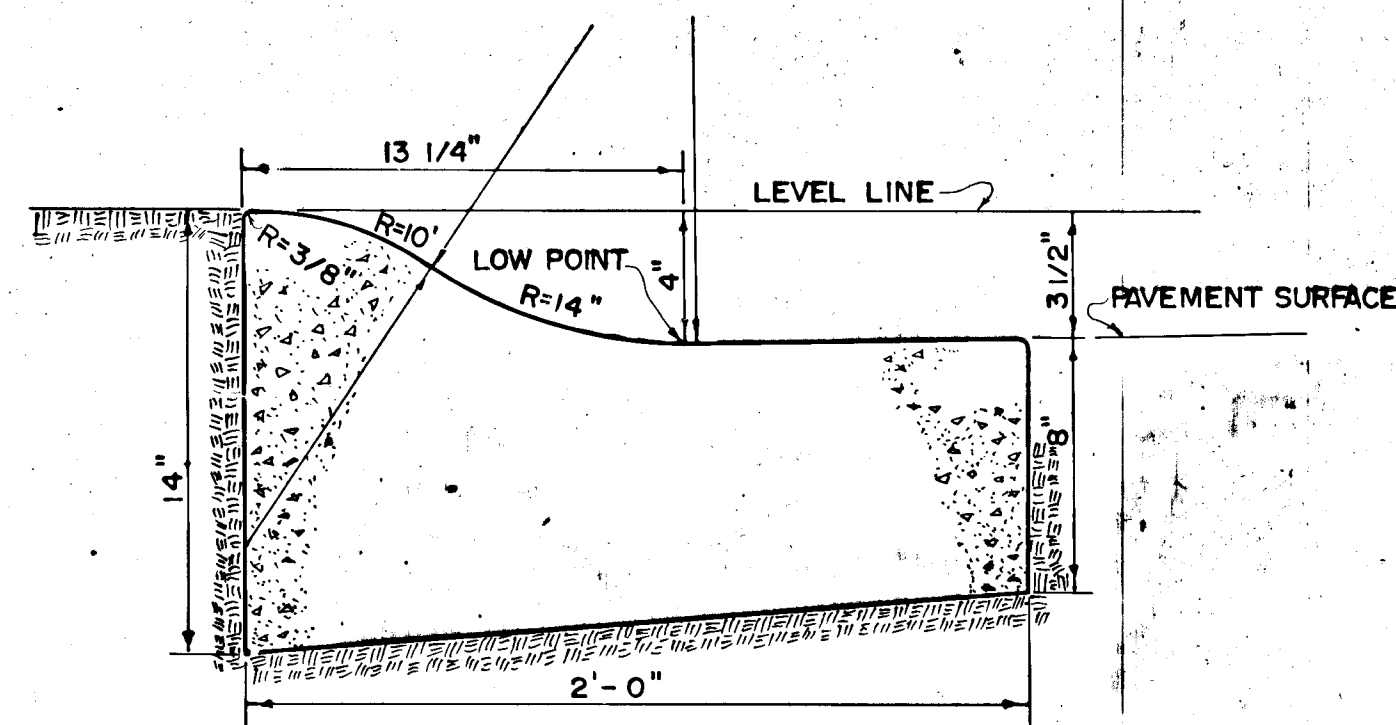
SCALE HOR. 1" = 5' VERT. 1" = 5' DATE MAY 1967

BROWNE - PANDULLO & ASSOCIATES  
ENGINEERS • PLANNERS • SURVEYORS

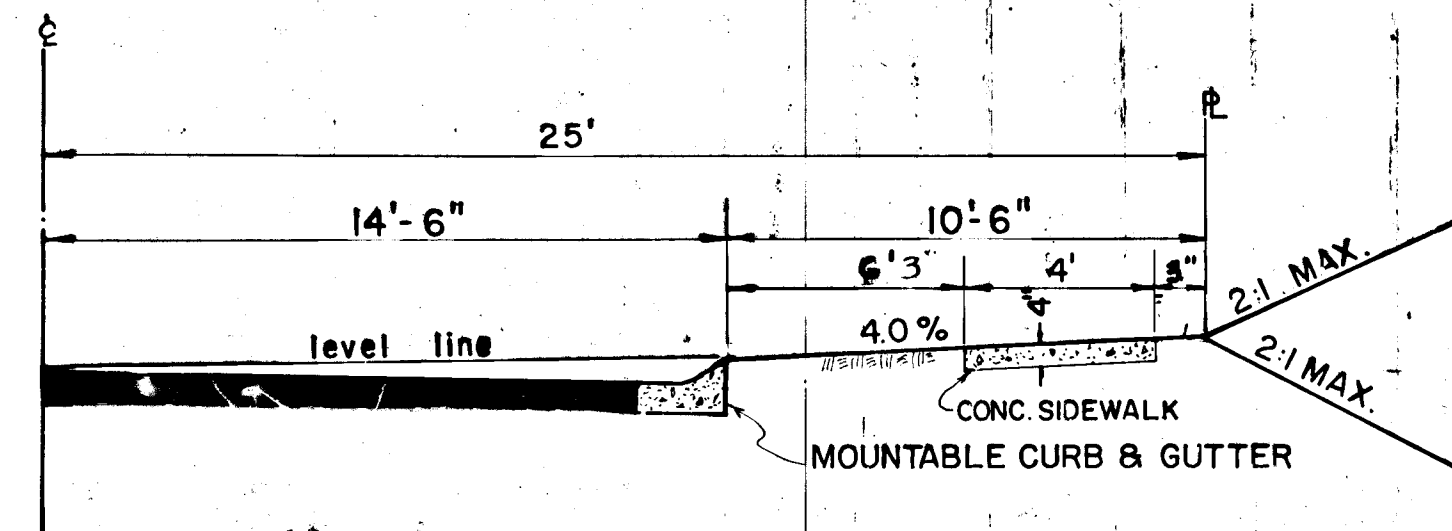
LIC. NO. \_\_\_\_\_ STATE \_\_\_\_\_

DRWN. \_\_\_\_\_ CHK'D. \_\_\_\_\_ SHEET 12 OF 14

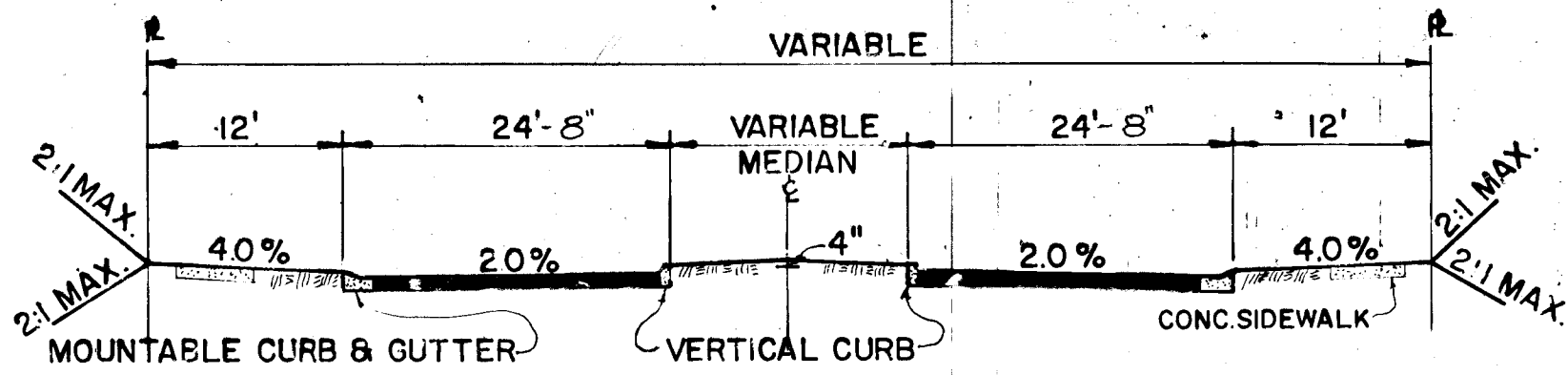
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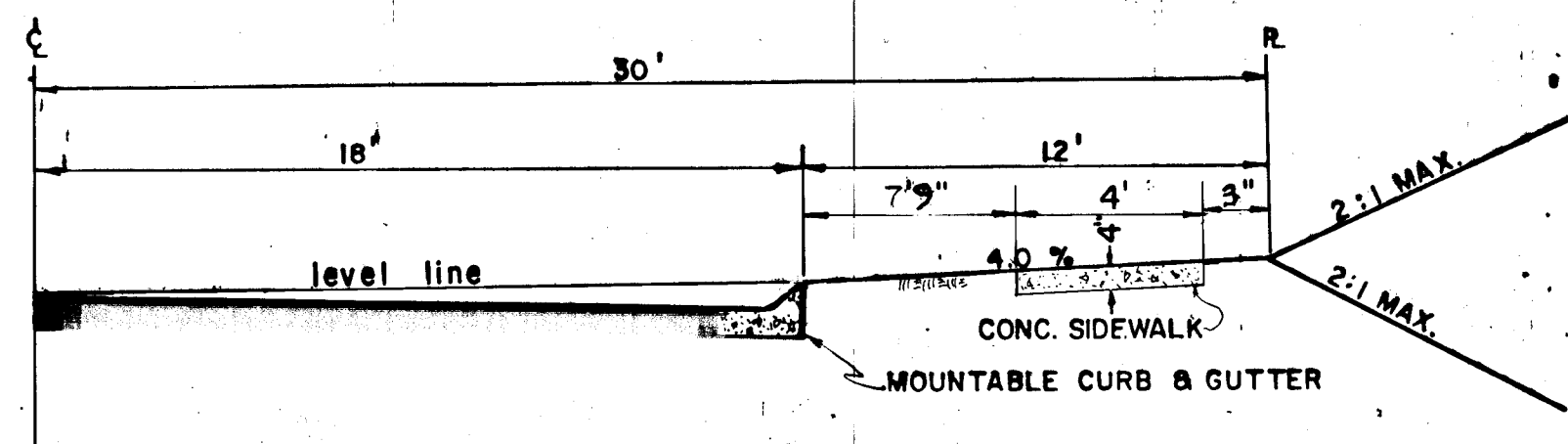
**MOUNTABLE CURB & GUTTER**  
NO SCALE



**TYPICAL STREET HALF SECTION**  
NO SCALE

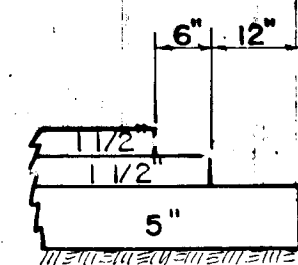


**TYPICAL DIVIDED STREET SECTION**  
NO SCALE

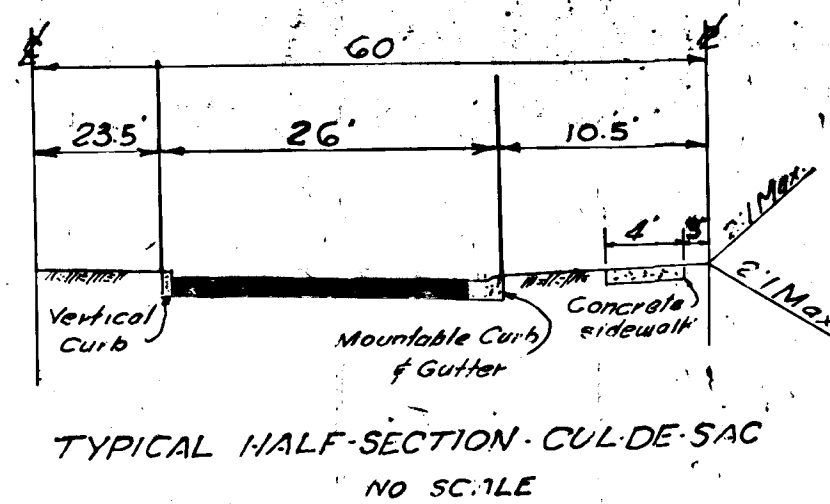


**TYPICAL STREET HALF SECTION**  
NO SCALE

NOTE: SIDEWALK AT DRIVEWAYS IS 6" THICK.



**TYPICAL EDGE OF PAVEMENT**  
(WHERE CURB IS NOT CONSTRUCTED)  
NO SCALE



**TYPICAL HALF-SECTION - CUL-DE-SAC**  
NO SCALE

BITUMINOUS CONCRETE SURFACE	1.5"	BAND C-3	FINAL PHASE
BITUMINOUS CONCRETE BINDER	1.5"	BAND A-3	
BITUMINOUS CONCRETE BASE (PLACED IN ONE COURSE)	5"	BAND C-2 OR G-3	FIRST PHASE

CLEARING AND GRADING ARTICLE C-1  
SUBGRADE ARTICLE C-2  
BASE COURSE ARTICLE C-31 OR C-33  
BINDER COURSE ARTICLE C-31  
SURFACE COURSE ARTICLE C-31

TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND SPECIFICATIONS.

**PRIMARY RESIDENTIAL STREET**  
NO SCALE

BITUMINOUS CONCRETE SURFACE	1.5"	BAND C-3	FINAL PHASE
BITUMINOUS CONCRETE BASE (PLACED IN ONE COURSE)	5"	BAND C-2 OR G-3	FIRST PHASE

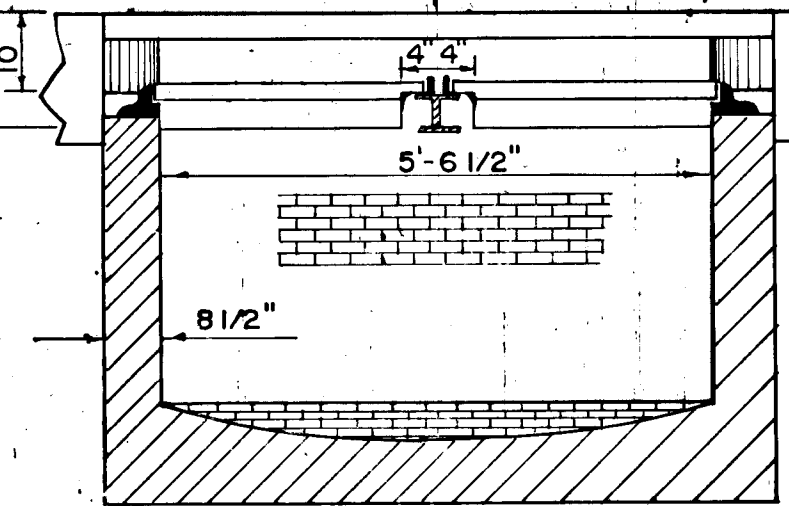
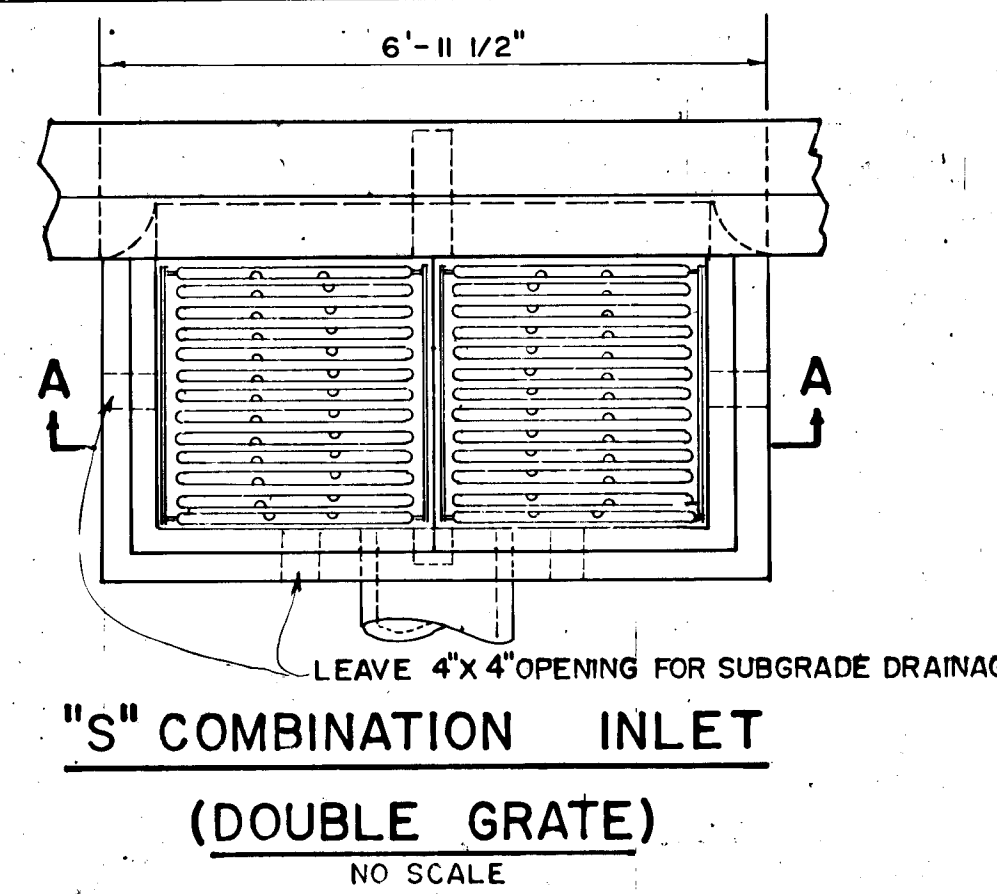
CLEARING and GRADING ARTICLE C-1  
SUBGRADE ARTICLE C-2  
BASE COURSE ARTICLE C-31 or C-33  
SURFACE COURSE ARTICLE C-31

TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND SPECIFICATIONS.

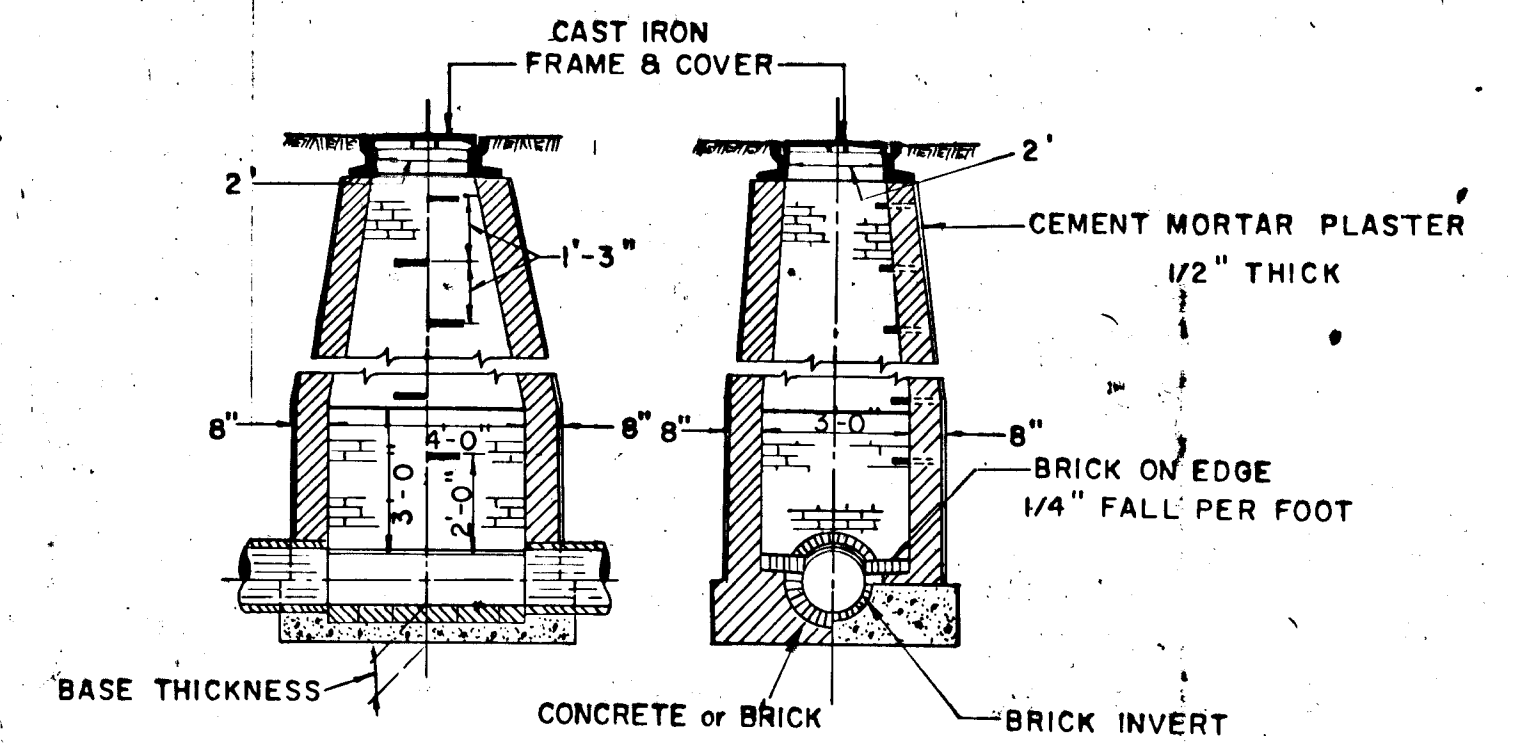
**SECONDARY RESIDENTIAL STREET**  
NO SCALE

**PAVEMENT SECTIONS**

RICHARD P. BROWNE, P.E. & L.S.  
Lic. No. 5238 State MD.



**SECTION "A-A"**  
NO SCALE

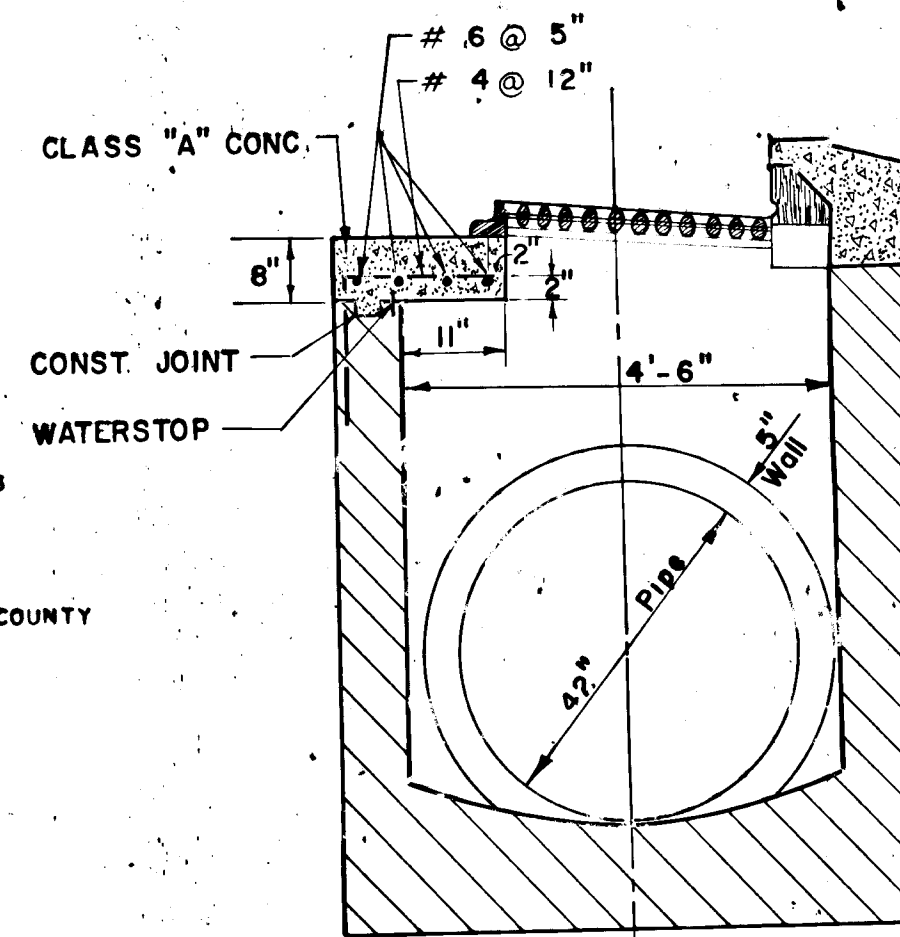


MANHOLE WALL THICKNESS  
8" to depth of 12'-0"  
12" (Below depth of 12'-0"  
To depth of 24'-0")

MANHOLE BASE THICKNESS  
8" Wall 12" Base  
12" " 15" "

BENCH HEIGHT ABOVE OUTGOING PIPE INVERT  
Storm Water 0.5 D

**STANDARD MANHOLE DETAIL**  
NO SCALE

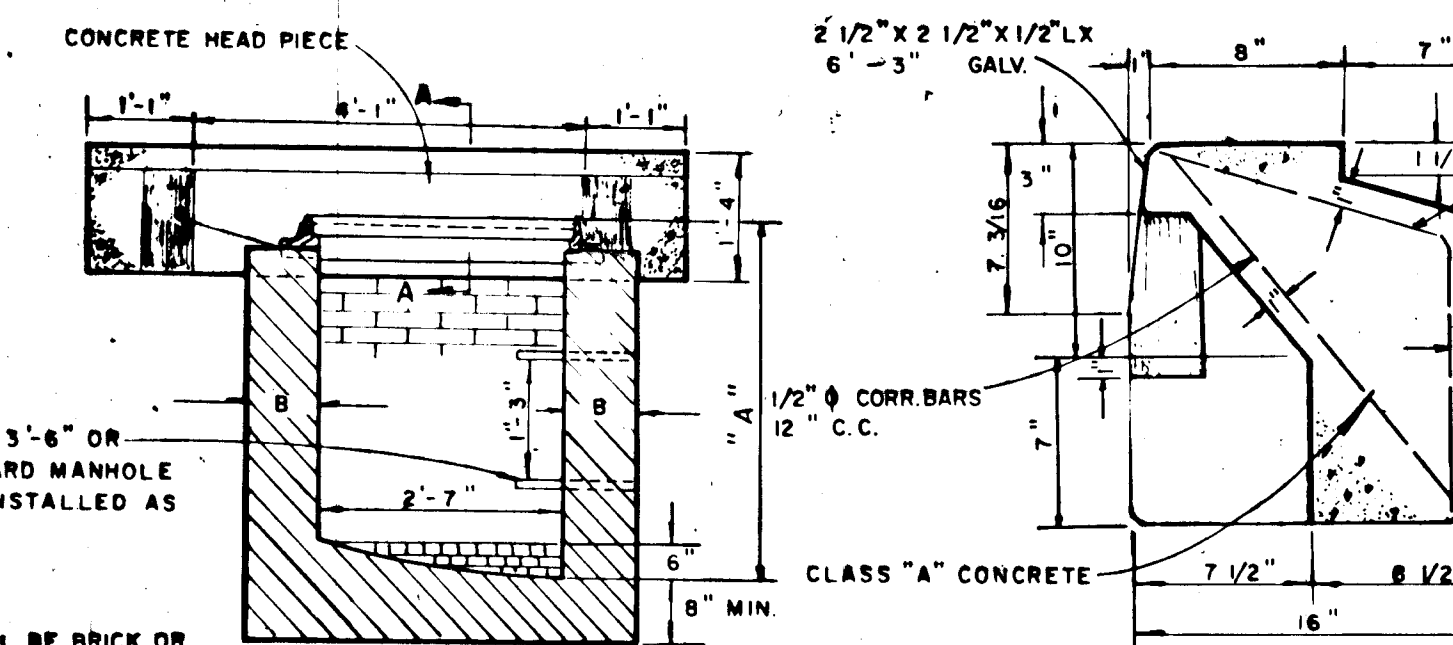
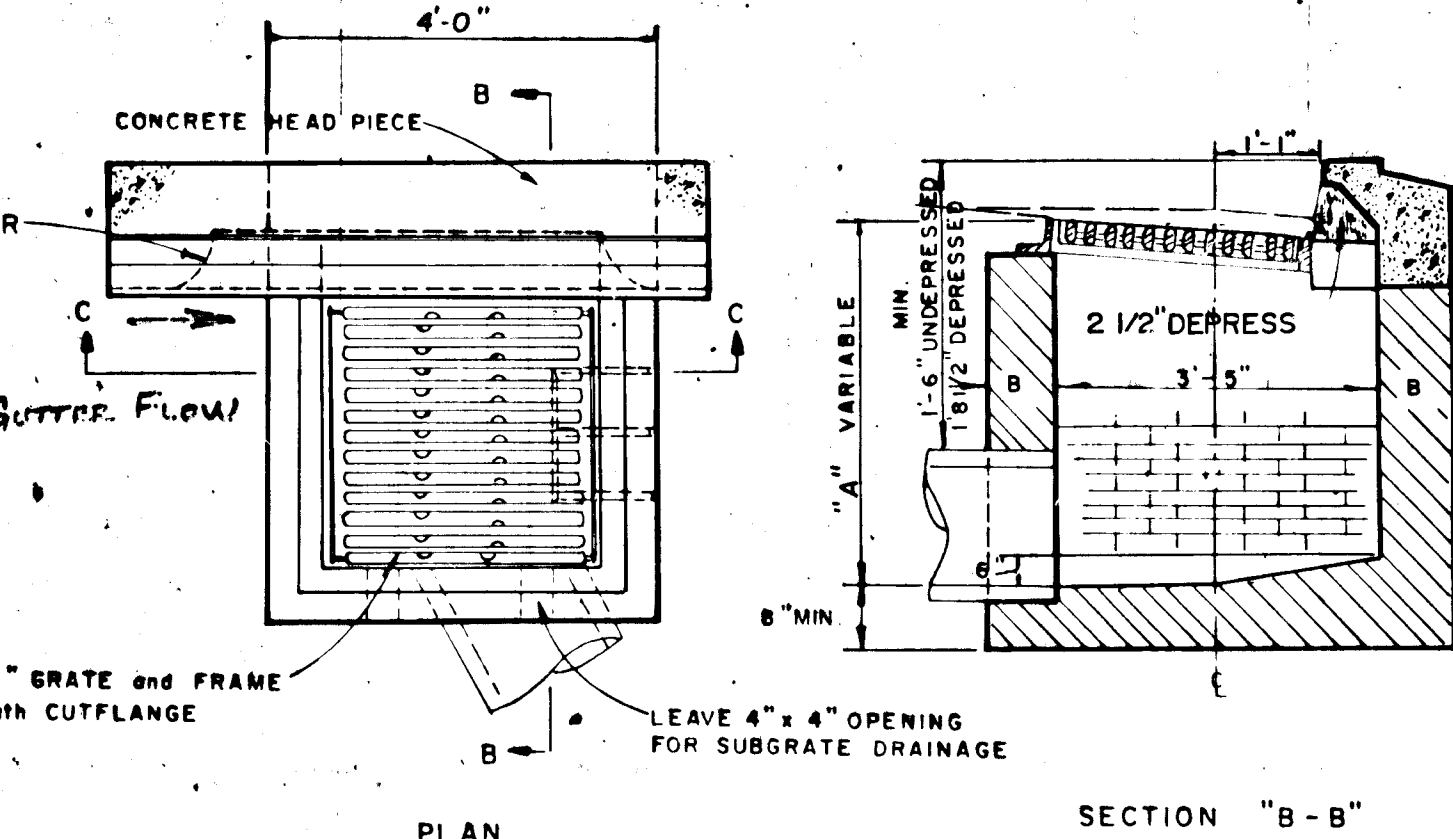


NOTES:  
1. THE WALLS AND INVERT SHALL BE CLASS "A" CONC.  
2. DETAILS NOT SHOWN ARE SAME AS DETAILS FOR "S" COMBINATION INLET MODIFIED (SINGLE GRATE).

**SPECIAL "S" COMBINATION INLET**

WHERE DEPTH IS 3'-6" OR GREATER STANDARD MANHOLE STEP SHALL BE INSTALLED AS SHOWN.

NOTE:  
1. THE WALLS AND INVERT SHALL BE BRICK OR REINFORCED CLASS "A" CONCRETE.  
2. B = 8" WHERE A IS 7' OR LESS.  
B = 12" WHERE A IS 7' TO 11'.  
3. TOP 4" OF WALLS SHALL BE BRICK MASONRY. ADDITIONAL BRICK SHALL BE USED TO BRING THE GRATE TO EXISTING GRADE IF REQUIRED.  
4. WHERE BRICK IS USED INVERT SHALL BE LAID ON EDGE.



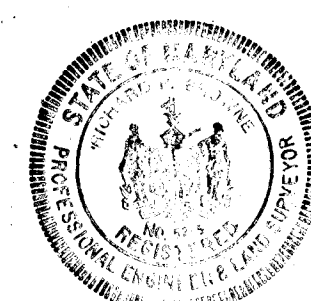
**SECTION "B-B"**

**SECTION "C-C"**

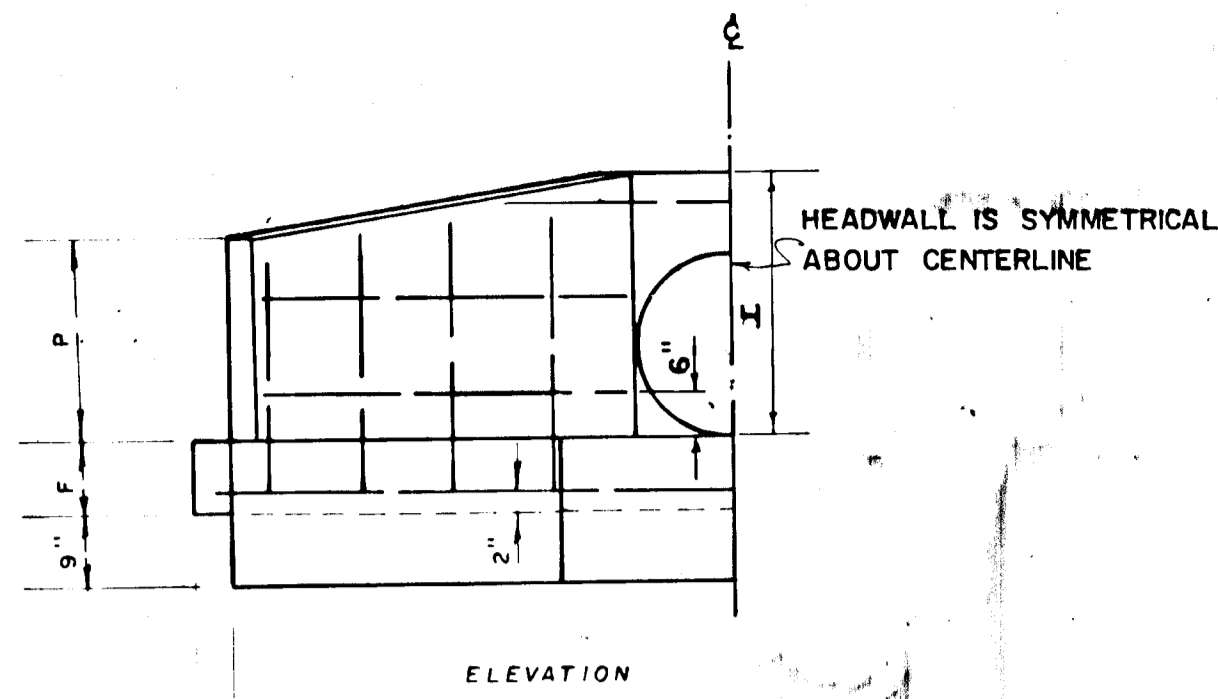
**"S" COMBINATION INLET DETAIL (SINGLE GRATE)**  
NO SCALE

ALL LONGITUDINAL BARS 6' LONG 1/2" O CORR. ANCHOR BARS, 24" C-C-4 REQUIRED BEGINNING 7 1/2' FROM ANGLE END FASTEN TO ANGLE WITH 1/4" FILLET WELD ALL AROUND BEFORE GALVANIZING.

APPROVED  
PLANNING CONSULTANT  
DATE: NOV 2 1964



Richard P. Browne, P.E. & L.S.  
Maryland license No. 5238



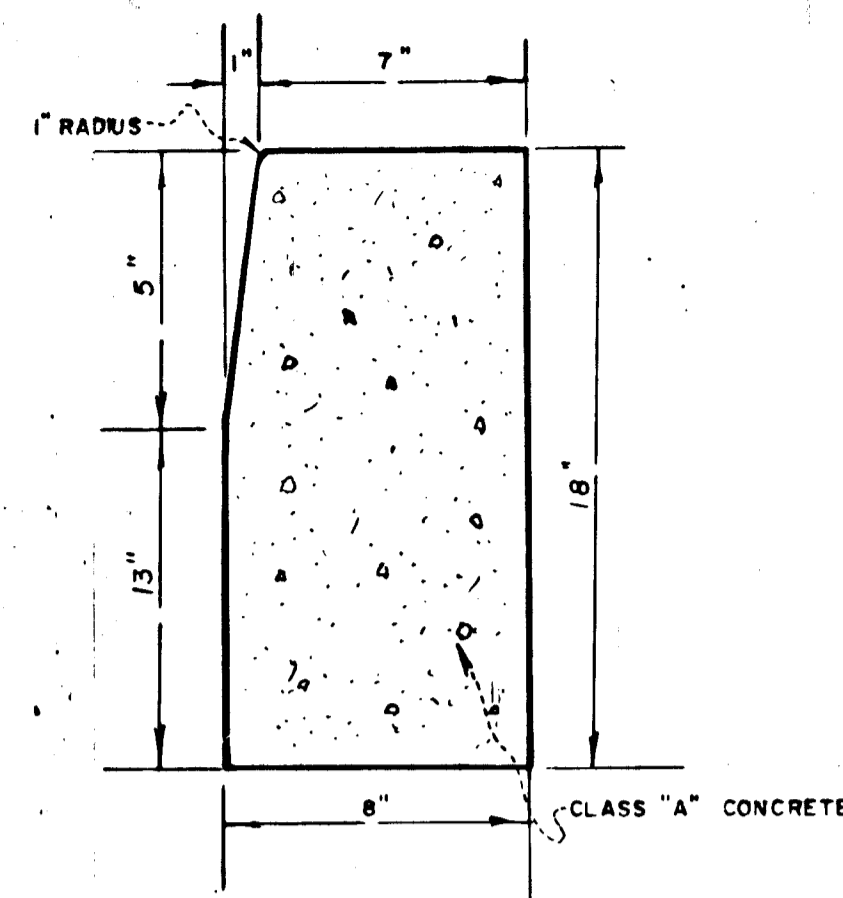
PIPE DIA. D	OPENING SQ. FT.	DIMENSION FOR CONCRETE										QUANTITIES	
		HEADWALL					WINGS					CONC. CU. YDS.	STEEL LBS.
12"	0.79	1.9	9"	9"	1.7	2.5	1.0	2.0	9"	7"	1.3	0.55	38
15"	1.23	2.0	9"	9"	1.1	2.6	2.2	9"	8"	1.5	0.73	46	
16"	1.39	2.1	9"	9"	1.1	2.7	2.3	9"	8"	1.5	0.75	46	
18"	1.78	2.3	9"	9"	2.2	3.0	3.0	2.7	9"	8"	1.7	0.89	57
24"	3.14	3.0	12"	9"	2.9	4.0	4.0	3.5	12"	11"	2.1	1.64	82
30"	4.91	3.6	12"	9"	3.4	4.8	5.2	4.1	12"	11"	2.6	2.14	113
36"	7.07	4.0	12"	9"	3.0	5.4	6.2	4.7	12"	11"	2.0	2.48	132
42"	9.62	4.6	12"	9"	4.5	6.4	7.4	5.6	12"	11"	3.2	3.30	163
48"	12.57	5.0	12"	9"	4.1	7.0	8.4	6.1	12"	11"	3.6	3.85	193

NOTE: (STEEL IN WINGS)  
VERT. 3/4" BARS 12" C.C.  
HOR. 1/2" BARS 12" C.C.  
HOOKED ON ONE END.

NOTE: CHAMFER ALL EXPOSED EDGES  
1" x 1" OR AS DIRECTED.

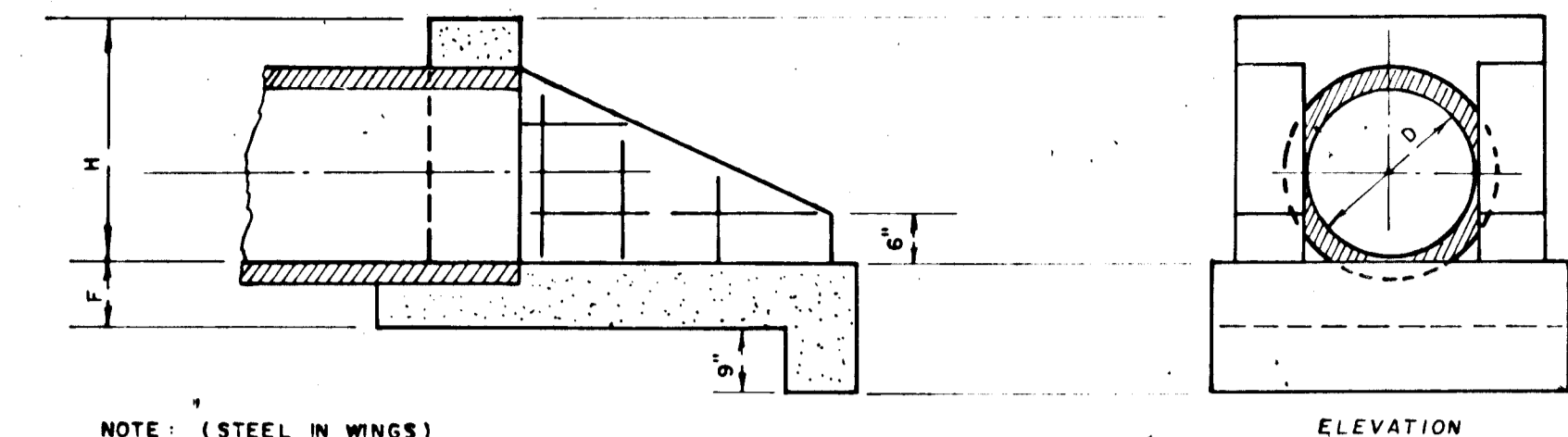
### STANDARD TYPE "F" HEADWALL

NOTE: 1. HEADWALLS FOR PIPE SIZES NOT SHOWN IN TABLE ABOVE,  
USE HEADWALL SPECIFIED FOR NEXT LARGEST PIPE  
2. HEADWALL IS MODIFIED IN ACCORDANCE WITH CASE 2  
FOR A TYPE "F" ENDWALL AS INDICATED IN THE HOWARD  
COUNTY ROAD CONSTRUCTION CODE & STANDARD SPECIFICATIONS.



### VERTICAL CURB

NO SCALE

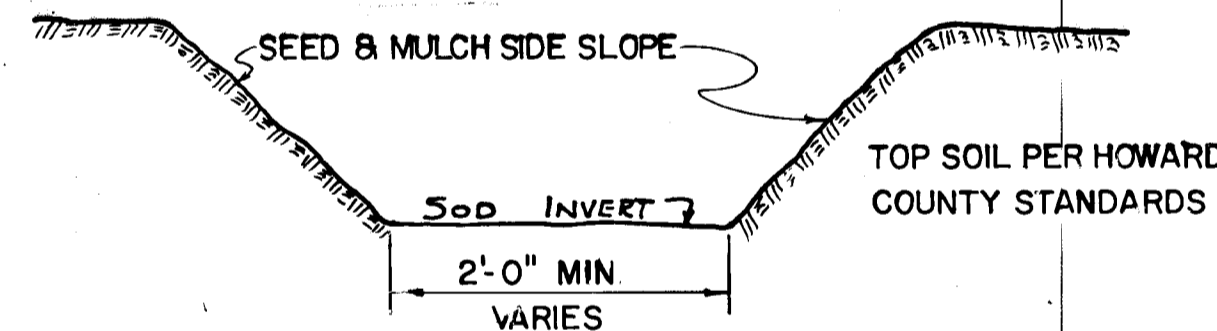
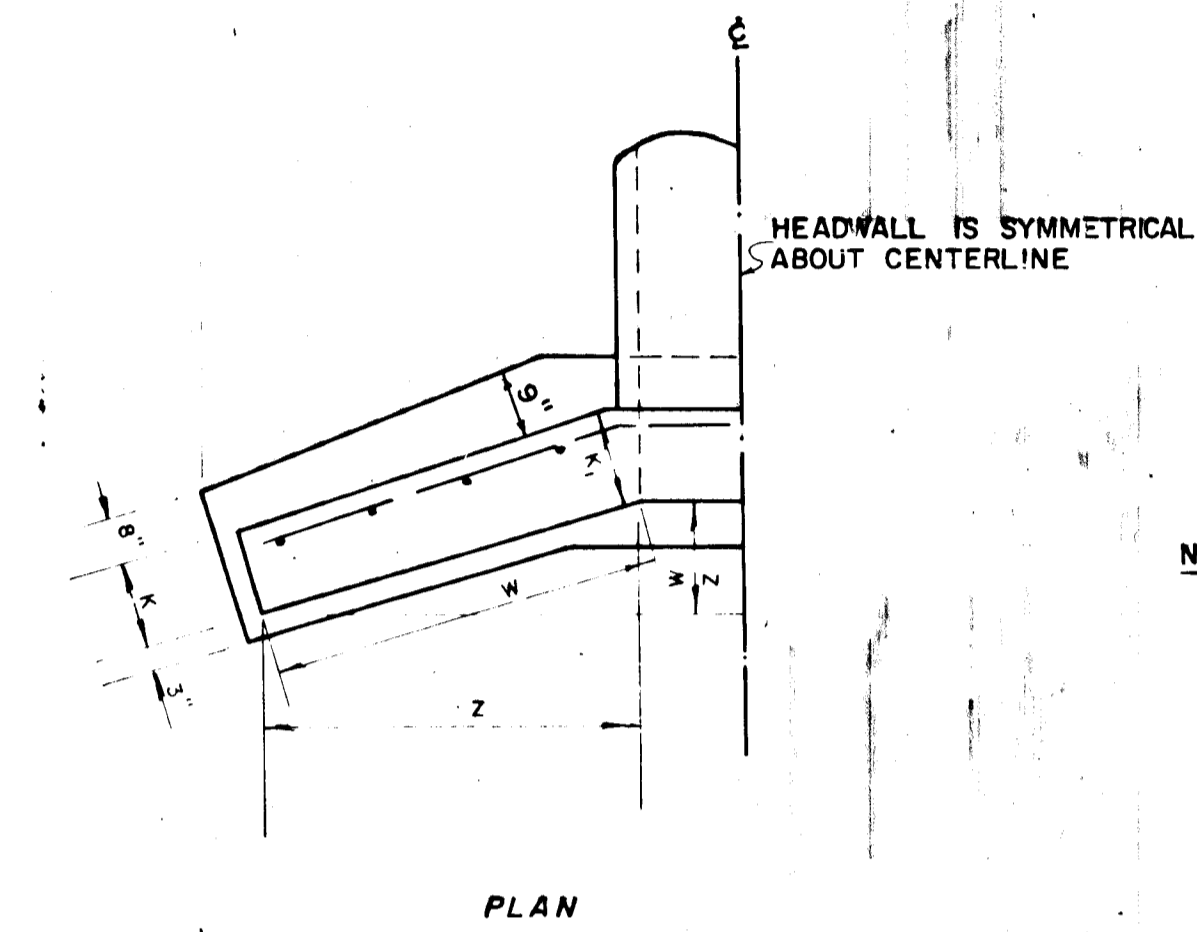
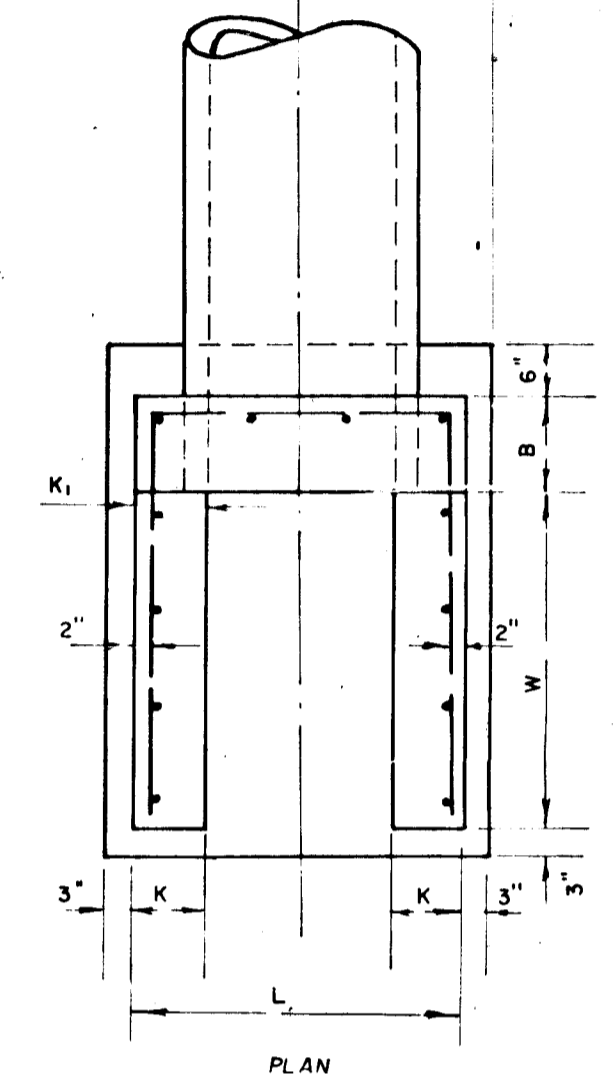


NOTE: (STEEL IN WINGS)  
VERT. 3/4" BARS 12" C.C.  
HOR. 1/2" BARS 12" C.C.  
HOOKED ON ONE END.

NOTE: CHAMFER ALL EXPOSED EDGES  
1" x 1" OR AS DIRECTED.

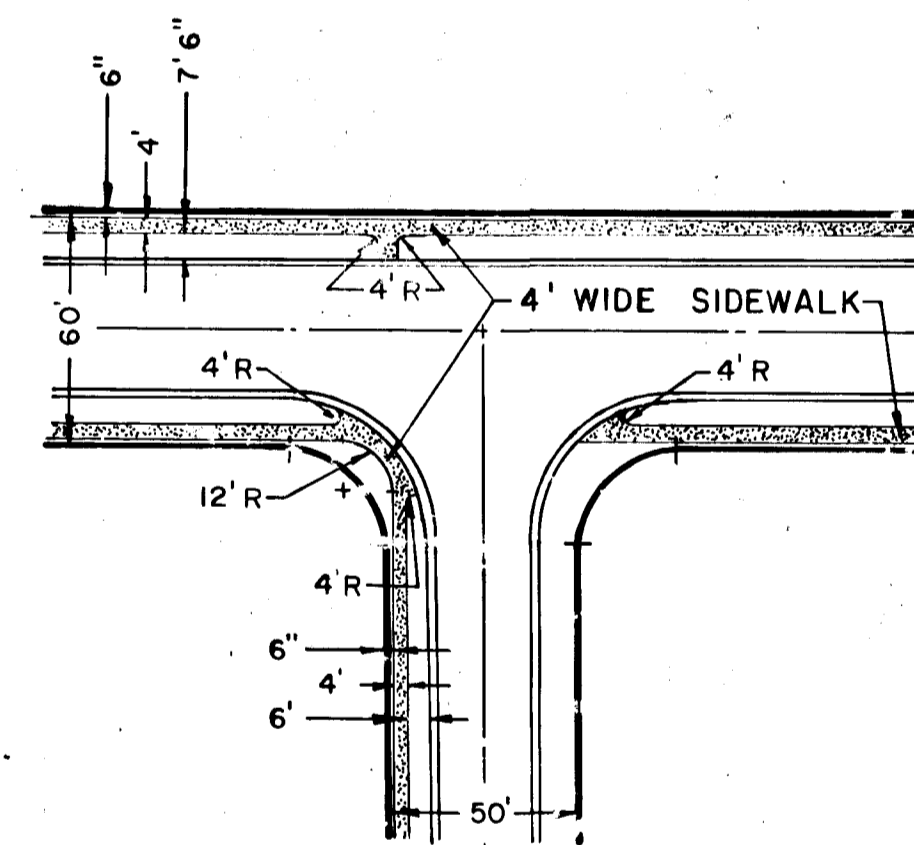
PIPE DIA. D	OPENING SQ. FT.	DIMENSIONS FOR CONCRETE										QUANTITIES	
		HEADWALL					WINGS					CONC. CU. YDS.	STEEL LBS.
12"	0.79	2.0	9"	9"	1.7	1.4	6"	6"	6"	6"	6"	0.36	34
15"	1.23	2.3	9"	9"	1.1	1.1 <td>6" <td>6" <td>6" <td>6" <td>6" <td>0.47</td> <td>37</td> </td></td></td></td></td>	6" <td>6" <td>6" <td>6" <td>6" <td>0.47</td> <td>37</td> </td></td></td></td>	6" <td>6" <td>6" <td>6" <td>0.47</td> <td>37</td> </td></td></td>	6" <td>6" <td>6" <td>0.47</td> <td>37</td> </td></td>	6" <td>6" <td>0.47</td> <td>37</td> </td>	6" <td>0.47</td> <td>37</td>	0.47	37
16"	1.39	2.4	9"	9"	1.1	1.1 <td>6" <td>6" <td>6" <td>6" <td>6" <td>0.50</td> <td>38</td> </td></td></td></td></td>	6" <td>6" <td>6" <td>6" <td>6" <td>0.50</td> <td>38</td> </td></td></td></td>	6" <td>6" <td>6" <td>6" <td>0.50</td> <td>38</td> </td></td></td>	6" <td>6" <td>6" <td>0.50</td> <td>38</td> </td></td>	6" <td>6" <td>0.50</td> <td>38</td> </td>	6" <td>0.50</td> <td>38</td>	0.50	38
18"	1.78	2.6	9"	9"	2.2	2.6 <td>6" <td>6" <td>6" <td>6" <td>6" <td>0.61</td> <td>53</td> </td></td></td></td></td>	6" <td>6" <td>6" <td>6" <td>6" <td>0.61</td> <td>53</td> </td></td></td></td>	6" <td>6" <td>6" <td>6" <td>0.61</td> <td>53</td> </td></td></td>	6" <td>6" <td>6" <td>0.61</td> <td>53</td> </td></td>	6" <td>6" <td>0.61</td> <td>53</td> </td>	6" <td>0.61</td> <td>53</td>	0.61	53
24"	3.14	3.6	12"	9"	2.9	3.6 <td>9" <td>9" <td>9" <td>9" <td>9" <td>1.17</td> <td>71</td> </td></td></td></td></td>	9" <td>9" <td>9" <td>9" <td>9" <td>1.17</td> <td>71</td> </td></td></td></td>	9" <td>9" <td>9" <td>9" <td>1.17</td> <td>71</td> </td></td></td>	9" <td>9" <td>9" <td>1.17</td> <td>71</td> </td></td>	9" <td>9" <td>1.17</td> <td>71</td> </td>	9" <td>1.17</td> <td>71</td>	1.17	71
30"	4.91	4.0	12"	9"	3.4	4.7 <td>9" <td>9" <td>9" <td>9" <td>9" <td>1.62</td> <td>91</td> </td></td></td></td></td>	9" <td>9" <td>9" <td>9" <td>9" <td>1.62</td> <td>91</td> </td></td></td></td>	9" <td>9" <td>9" <td>9" <td>1.62</td> <td>91</td> </td></td></td>	9" <td>9" <td>9" <td>1.62</td> <td>91</td> </td></td>	9" <td>9" <td>1.62</td> <td>91</td> </td>	9" <td>1.62</td> <td>91</td>	1.62	91
36"	7.07	4.6	12"	9"	3.0	5.4 <td>9" <td>9" <td>9" <td>9" <td>9" <td>2.12</td> <td>116</td> </td></td></td></td></td>	9" <td>9" <td>9" <td>9" <td>9" <td>2.12</td> <td>116</td> </td></td></td></td>	9" <td>9" <td>9" <td>9" <td>2.12</td> <td>116</td> </td></td></td>	9" <td>9" <td>9" <td>2.12</td> <td>116</td> </td></td>	9" <td>9" <td>2.12</td> <td>116</td> </td>	9" <td>2.12</td> <td>116</td>	2.12	116
42"	9.62	5.6	12"	9"	4.5	6.4 <td>9" <td>9" <td>9" <td>9" <td>9" <td>3.15</td> <td>141</td> </td></td></td></td></td>	9" <td>9" <td>9" <td>9" <td>9" <td>3.15</td> <td>141</td> </td></td></td></td>	9" <td>9" <td>9" <td>9" <td>3.15</td> <td>141</td> </td></td></td>	9" <td>9" <td>9" <td>3.15</td> <td>141</td> </td></td>	9" <td>9" <td>3.15</td> <td>141</td> </td>	9" <td>3.15</td> <td>141</td>	3.15	141
48"	12.57	6.0	12"	9"	4.1	7.0 <td>9" <td>9" <td>9" <td>9" <td>9" <td>3.88</td> <td>174</td> </td></td></td></td></td>	9" <td>9" <td>9" <td>9" <td>9" <td>3.88</td> <td>174</td> </td></td></td></td>	9" <td>9" <td>9" <td>9" <td>3.88</td> <td>174</td> </td></td></td>	9" <td>9" <td>9" <td>3.88</td> <td>174</td> </td></td>	9" <td>9" <td>3.88</td> <td>174</td> </td>	9" <td>3.88</td> <td>174</td>	3.88	174

### STANDARD TYPE "G" HEADWALL



### TYPICAL DRAINAGE DITCH

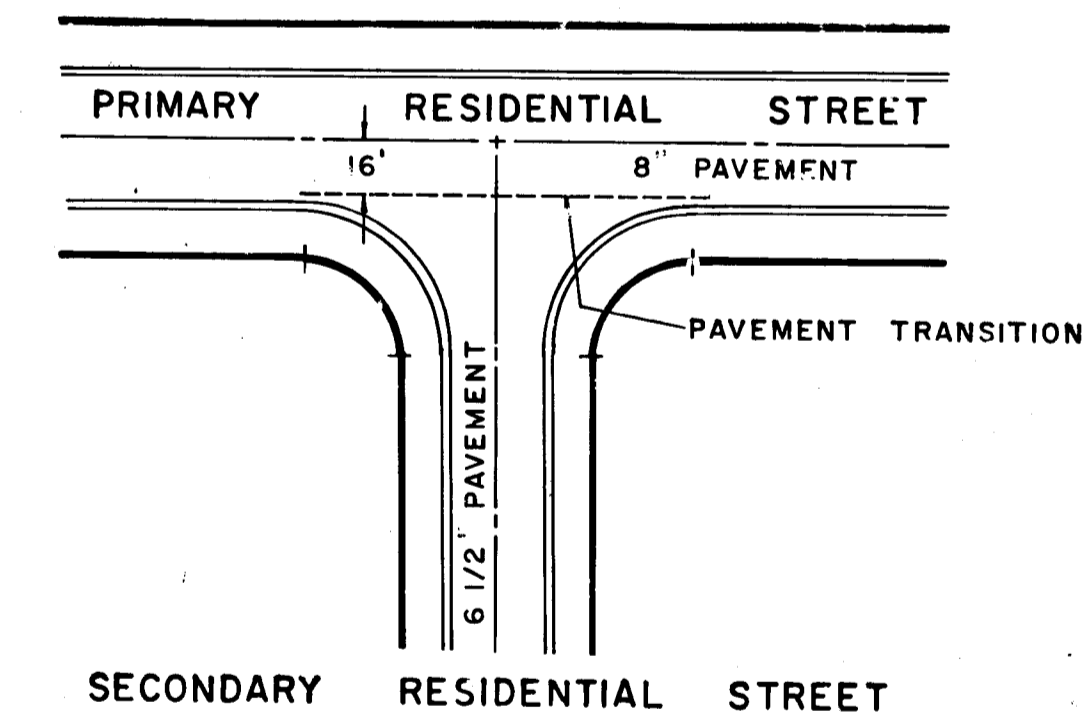
NOTE: ALL EXISTING DITCHES APPROACHING PROPOSED  
HEADWALLS SHALL BE TRIMMED IN ACCORDANCE  
WITH ARTICLE C-6 OF THE HOWARD CO. ROAD  
CONSTRUCTION CODE & STANDARD SPECIFICATIONS.



### TYPICAL SIDEWALK DETAIL AT INTERSECTIONS

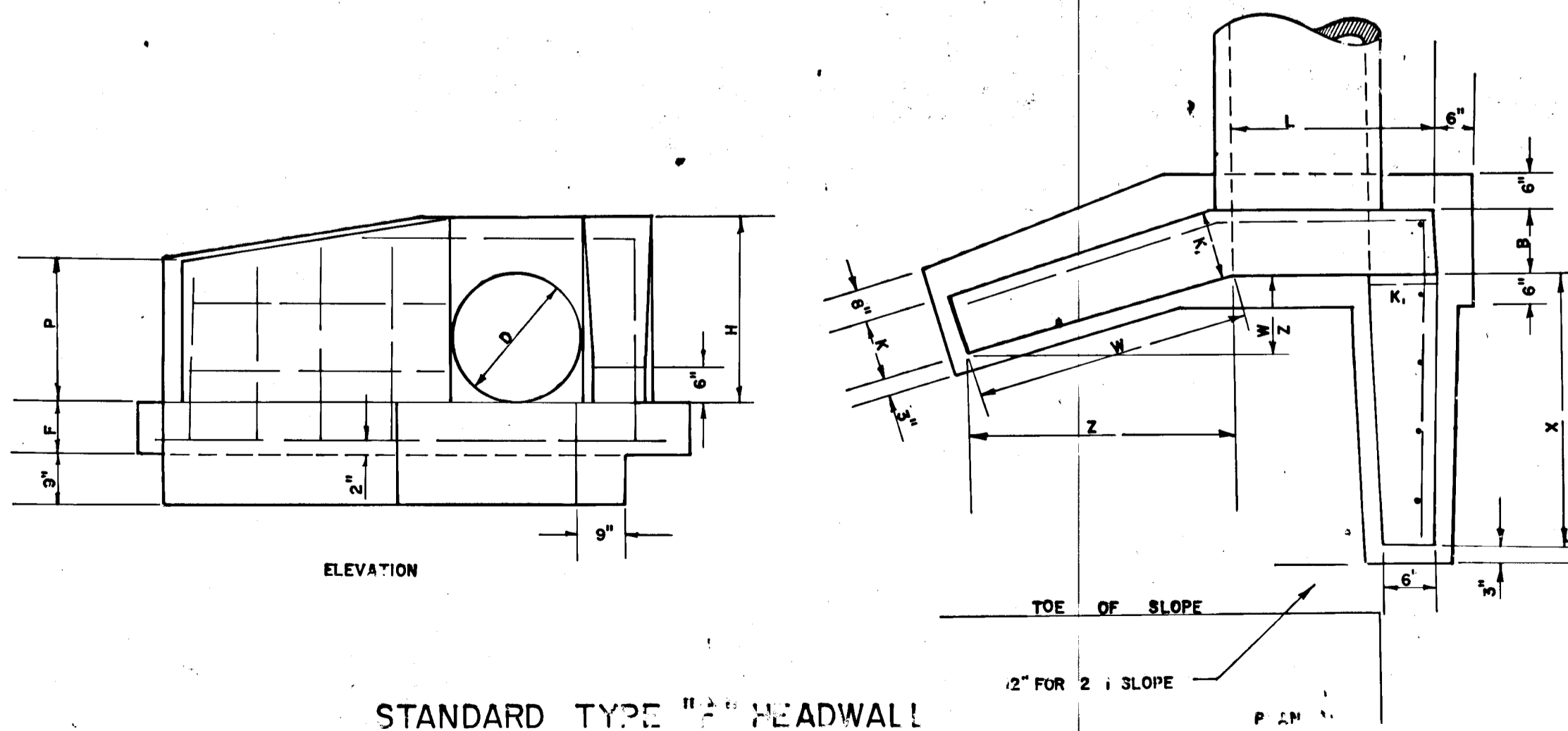
NO SCALE

NOTES: 1. STEEL IN HEADWALL WINGS SHALL BE  
VERT. 3/4" BARS 12" C.C.,  
HOR. 1/2" BARS 12" C.C.,  
HOOKED ON ONE END.  
2. CHAMFER ALL EXPOSED EDGES  
1" OR AS DIRECTED  
3. FOR TABLE OF DIMENSIONS SEE  
DETAIL OF MOD. "F" HEADWALL.



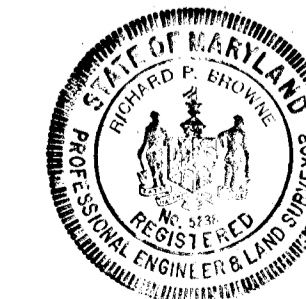
### TYPICAL PAVEMENT TRANSITION DETAIL

NO SCALE



### STANDARD TYPE "H" HEADWALL

Richard P. Brovne  
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Lic. No. 5238 State of Md.



APPROVED  
PLANNING COMMISSION  
DATE: NOV 3 1967

J. H. E. J.